

=> fil reg

FILE 'REGISTRY' ENTERED AT 09:04:35 ON 29 JAN 2002
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STRUCTURE FILE UPDATES: 28 JAN 2002 HIGHEST RN 387816-30-0
DICTIONARY FILE UPDATES: 28 JAN 2002 HIGHEST RN 387816-30-0

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

The P indicator for Preparations was not generated for all of the
CAS Registry Numbers that were added to the H/Z/CA/CAPLUS files between
12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches
during this period, either directly appended to a CAS Registry Number
or by qualifying an L-number with /P, may have yielded incomplete results.
As of 1/23/02, the situation has been resolved. Also, note that searches
conducted using the PREP role indicator were not affected.

Customers running searches and/or SDIs in the H/Z/CA/CAPLUS files
incorporating CAS Registry Numbers with the P indicator between 12/27/01
and 1/23/02, are encouraged to re-run these strategies. Contact the
CAS Help Desk at 1-800-848-6533 in North America or 1-614-447-3698,
worldwide, or send an e-mail to help@cas.org for further assistance or to
receive a credit for any duplicate searches.

=> d ide can tot

L66 ANSWER 1 OF 10 REGISTRY COPYRIGHT 2002 ACS
RN 329967-85-3 REGISTRY
CN Synthetase, prostaglandin endoperoxide, 1 (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Arachidonate cyclooxygenase 1
CN COX-1
CN **Cyclooxygenase 1**
CN Prostaglandin endoperoxide synthetase 1
MF Unspecified
CI MAN
SR CA
LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

208 REFERENCES IN FILE CA (1967 TO DATE)

211 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:68442

REFERENCE 2: 136:65550

REFERENCE 3: 136:64576

REFERENCE 4: 136:63779

REFERENCE 5: 136:63770

REFERENCE 6: 136:49587

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

REFERENCE 7: 136:49576

REFERENCE 8: 136:48407

REFERENCE 9: 136:48271

REFERENCE 10: 136:48168

L66 ANSWER 2 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 329900-75-6 REGISTRY

CN Synthetase, prostaglandin endoperoxide, 2 (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Arachidonate cyclooxygenase 2

CN COX 2

CN **Cyclooxygenase 2**

CN Prostaglandin endoperoxide synthase-2

CN Prostaglandin endoperoxide synthetase 2

CN Prostaglandin G/H synthase-2

MF Unspecified

CI MAN

SR CA

LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

714 REFERENCES IN FILE CA (1967 TO DATE)

733 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:69808

REFERENCE 2: 136:69730

REFERENCE 3: 136:68721

REFERENCE 4: 136:68645

REFERENCE 5: 136:68589

REFERENCE 6: 136:68442

REFERENCE 7: 136:68142

REFERENCE 8: 136:67990

REFERENCE 9: 136:67775

REFERENCE 10: 136:67614

L66 ANSWER 3 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 219566-52-6 REGISTRY

CN Cyclopentanebutanoic acid, 3,5-dihydroxy-2-[(1E,3S,5Z)-3-hydroxy-1,5-undecadienyl]-, (1S,2R,3R,5S)- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN **IPF2.alpha.-V**

CN **Isoprostane IPF2.alpha.-V**

FS STEREOSEARCH

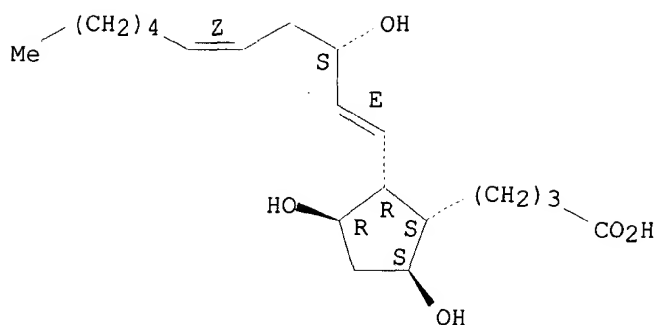
MF C20 H34 O5

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry.

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

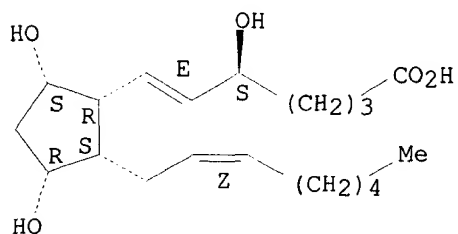
2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 131:322440

REFERENCE 2: 130:95398

L66 ANSWER 4 OF 10 REGISTRY COPYRIGHT 2002 ACS
RN **214894-56-1** REGISTRY
CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,9.alpha.,11.alpha.,12.alpha.,14Z)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C20 H34 O5
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, TOXLIT

Absolute stereochemistry.
Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6 REFERENCES IN FILE CA (1967 TO DATE)
7 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:178987

REFERENCE 2: 135:3903

REFERENCE 3: 134:278955

REFERENCE 4: 134:278954

REFERENCE 5: 130:61215

REFERENCE 6: 129:316057

L66 ANSWER 5 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 190664-75-6 REGISTRY

CN 5,9-Decadienoic acid, 10-[(1S,2R,3R,5S)-3,5-dihydroxy-2-pentylcyclopentyl]-8-hydroxy-, (5Z,8S,9E)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 5,9-Decadienoic acid, 10-(3,5-dihydroxy-2-pentylcyclopentyl)-8-hydroxy-, [1S-[1.alpha.(5Z,8R*,9E),2.alpha.,3.beta.,5.beta.]]-

OTHER NAMES:

CN 8-F2t-Isoprostane

CN IPF2.alpha.-III

CN Isoprostane IPF2.alpha.-III

FS STEREOSEARCH

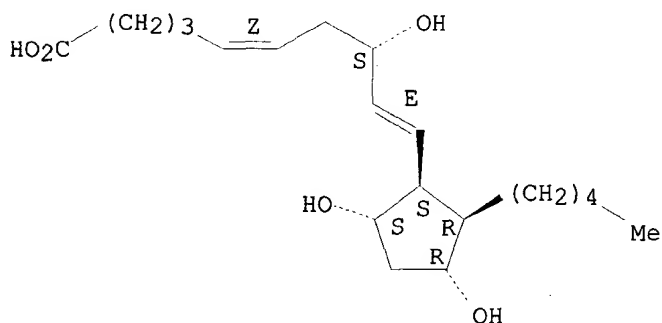
MF C20 H34 O5

SR CA

LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, TOXLIT

Absolute stereochemistry. Rotation (-).

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10 REFERENCES IN FILE CA (1967 TO DATE)

10 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:255598

REFERENCE 2: 135:57207

REFERENCE 3: 134:310229

REFERENCE 4: 134:266111

REFERENCE 5: 132:217250

REFERENCE 6: 131:281919

REFERENCE 7: 131:227155

REFERENCE 8: 130:262541

REFERENCE 9: 130:250679

REFERENCE 10: 127:17515

L66 ANSWER 6 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 180469-63-0 REGISTRY

CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-, (5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

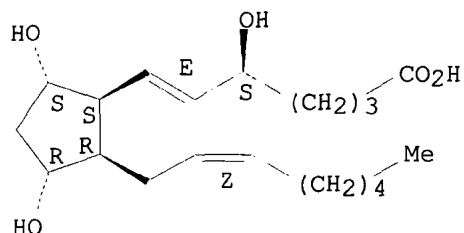
OTHER NAMES:

CN IPF2.alpha.-I

CN Isoprostane IPF2.alpha.-I

FS STEREOSEARCH
 MF C20 H34 O5
 SR CA
 LC STN Files: BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER, TOXLIT

Absolute stereochemistry. Rotation (-).
 Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11 REFERENCES IN FILE CA (1967 TO DATE)
 11 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 135:57207
 REFERENCE 2: 134:310229
 REFERENCE 3: 131:336832
 REFERENCE 4: 131:227155
 REFERENCE 5: 130:250679
 REFERENCE 6: 130:166709
 REFERENCE 7: 130:61215
 REFERENCE 8: 129:310983
 REFERENCE 9: 129:662
 REFERENCE 10: 127:344749

L66 ANSWER 7 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 39391-18-9 REGISTRY

CN Synthetase, prostaglandin endoperoxide (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Arachidonate cyclooxygenase
 CN Arachidonic acid cyclooxygenase
 CN Arachidonic cyclooxygenase
 CN **Cyclooxygenase**
 CN E.C. 1.14.99.1
 CN Fatty acid cyclooxygenase
 CN Gene TIS10 proteins
 CN Peroxidase, prostaglandin hydroperoxide
 CN PG synthetase
 CN PGG/H synthase
 CN PGG2 peroxidase
 CN PGH synthase
 CN PGH2 synthase
 CN PGH2 synthetase
 CN PGI2 cyclooxygenase
 CN Prostaglandin cyclooxygenase
 CN Prostaglandin endoperoxide G/H synthase

CN Prostaglandin endoperoxide H synthase
CN Prostaglandin endoperoxide synthase
CN Prostaglandin endoperoxide synthetase
CN Prostaglandin G/H synthase
CN Prostaglandin G2 peroxidase
CN Prostaglandin G2/H2 synthase
CN Prostaglandin H synthase
CN Prostaglandin H synthetase
CN Prostaglandin H2 synthase
CN Prostaglandin H2 synthetase
CN Prostaglandin hydroperoxidase
CN Prostaglandin hydroperoxide peroxidase
CN Prostaglandin peroxidase
CN Proteins, specific or class, gene TIS10
CN TXA2 cyclooxygenase
DR 59763-19-8, 64427-82-3, 69913-02-6
MF Unspecified
CI MAN
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CAPLUS, CASREACT, CEN, CHEMCATS, CIN, EMBASE, NIOSHTIC, PROMT,
TOXCENTER, TOXLIT, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

7172 REFERENCES IN FILE CA (1967 TO DATE)

73 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

7158 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:67410

REFERENCE 2: 136:67126

REFERENCE 3: 136:66317

REFERENCE 4: 136:65408

REFERENCE 5: 136:64557

REFERENCE 6: 136:63427

REFERENCE 7: 136:58848

REFERENCE 8: 136:52191

REFERENCE 9: 136:48206

REFERENCE 10: 136:47985

L66 ANSWER 8 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 27415-26-5 REGISTRY

CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 5-Heptenoic acid, 7-[3,5-dihydroxy-2-(3-hydroxy-1-octenyl)cyclopentyl]-
(8CI)

OTHER NAMES:

CN 15-F2t-Isoprostane

CN 8-epi-PGF2.alpha.

CN 8-epi-Prostaglandin F2.alpha.

CN 8-Iso-PGF2.alpha.

CN 8-iso-Prostaglandin F2.alpha.

CN 8-Isoprostaglandin F2.alpha.

CN Isoprostaglandin F2.alpha. type-III

FS STEREOSEARCH

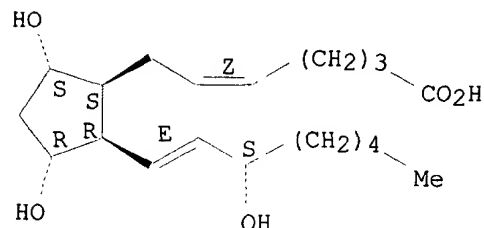
MF C20 H34 O5

LC STN Files: ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CANCERLIT,
CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, EMBASE, MEDLINE,

TOXCENTER, TOXLIT, USPATFULL

(*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

301 REFERENCES IN FILE CA (1967 TO DATE)

4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

301 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:68019
REFERENCE 2: 136:52094
REFERENCE 3: 136:48283
REFERENCE 4: 136:35820
REFERENCE 5: 136:32971
REFERENCE 6: 136:32053
REFERENCE 7: 136:16442
REFERENCE 8: 136:4645
REFERENCE 9: 136:3973
REFERENCE 10: 135:370126

L66 ANSWER 9 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 7782-44-7 REGISTRY

CN Oxygen (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Dioxygen

CN Molecular oxygen

CN Oxygen molecule

FS 3D CONCORD

DR 1338-93-8, 14797-70-7, 80217-98-7, 80937-33-3

MF O2

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,
ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER,
TOXLIT, TRCTHERMO*, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

O=O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

262107 REFERENCES IN FILE CA (1967 TO DATE)
20212 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
262385 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:79007
REFERENCE 2: 136:79002
REFERENCE 3: 136:78942
REFERENCE 4: 136:78935
REFERENCE 5: 136:78730
REFERENCE 6: 136:78483
REFERENCE 7: 136:78463
REFERENCE 8: 136:78456
REFERENCE 9: 136:78448
REFERENCE 10: 136:78433

L66 ANSWER 10 OF 10 REGISTRY COPYRIGHT 2002 ACS

RN 78-44-4 REGISTRY

CN Carbamic acid, (1-methylethyl)-, 2-[[[aminocarbonyl]oxy]methyl]-2-methylpentyl ester (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

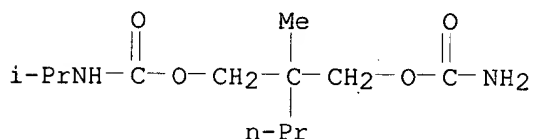
CN Carbamic acid, isopropyl-, 2-(hydroxymethyl)-2-methylpentyl ester, carbamate (6CI)

CN Carbamic acid, isopropyl-, 2-(hydroxymethyl)-2-methylpentyl ester carbamate (ester) (8CI)

OTHER NAMES:

CN 2-Methyl-2-propyl-1,3-propanediol carbamate isopropylcarbamate
CN Apesan
CN Atonalyt
CN Calenfa
CN Caprodat
CN Carisol
CN Carisoma
CN Carisoprodote
CN Carisoprodatum
CN Carisoprodol
CN Domarax
CN Flexal
CN Flexartal
CN Isobamate
CN Isomeprobamate
CN Isopropyl meprobamate
CN Isoprotan
CN Isoprotane
CN Isoprothane
CN Izoprotan
CN Miolisodal
CN Mioril
CN N-Isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate

CN Rela
 CN Relasom
 CN Sanoma
 CN Skutamil
 CN Soma
 CN Somadril
 CN Somalgit
 CN Stialgin
 FS 3D CONCORD
 DR 8053-63-2
 MF C12 H24 N2 O4
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN,
 CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, HSDB*, IPA, MEDLINE, MRCK*,
 NIOSHTIC, PHAR, PHARMASEARCH, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER,
 TOXLIT, USAN, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: EINECS**, WHO
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

162 REFERENCES IN FILE CA (1967 TO DATE)
 162 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 21 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 135:322726
 REFERENCE 2: 135:231801
 REFERENCE 3: 135:210730
 REFERENCE 4: 134:362292
 REFERENCE 5: 134:349093
 REFERENCE 6: 134:290275
 REFERENCE 7: 134:127102
 REFERENCE 8: 134:26229
 REFERENCE 9: 133:292058
 REFERENCE 10: 133:3389

=> fil hcaplus
 FILE 'HCAPLUS' ENTERED AT 09:04:46 ON 29 JAN 2002
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for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE COVERS 1907 - 29 Jan 2002 VOL 136 ISS 5
FILE LAST UPDATED: 28 Jan 2002 (20020128/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

HCAplus now provides online access to patents and literature covered in CA from 1907 to the present. Bibliographic information and abstracts were added in 2001 for over 3.8 million records from 1907-1966.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the H/Z/CA/CAplus files between 12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches during this period, either directly appended to a CAS Registry Number or by qualifying an L-number with /P, may have yielded incomplete results. As of 1/23/02, the situation has been resolved. Also, note that searches conducted using the PREP role indicator were not affected.

=> d all hitstr tot 164

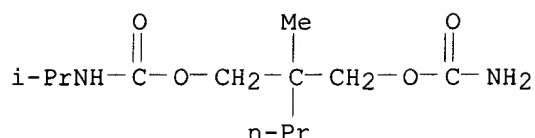
L64 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 2000:384464 HCAPLUS
DN 133:3389
TI **Methods** and compositions for **determining** lipid peroxidation levels in oxidant stress syndromes and diseases
IN **Fitzgerald, Garret A.; Rokach, Joshua; Pratico, Domenico; Trojanowski, John Q.**
PA The Trustees of the University of Pennsylvania, USA; Florida Institute of Technology
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12P031-00
ICS C12Q001-26; G01N033-53
CC 14-10 (Mammalian Pathological Biochemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2000032805	A1	20000608	WO 1999-US28583	19991202 <--
	W: AU, CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1135519	A1	20010926	EP 1999-965096	19991202 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	US 1998-110569	P	19981202 <--		
	WO 1999-US28583	W	19991202		
AB	The invention includes methods useful for the diagnosis of Alzheimer's disease and the evaluation of enhanced levels of lipid peroxidn. in a mammal. The methods utilize isoprostanes as sensitive and stable mol. markers for lipid peroxidn. in a mammal. Methods of identifying compds. useful for the treatment of Alzheimer's disease or for				

reducing levels of lipid peroxidn. in a mammal are also included. The invention also includes kits useful for the diagnosis of Alzheimer's disease and for the evaluation of levels of lipid peroxidn. in a mammal.

ST diagnosis Alzheimers disease lipid peroxidn
IT Peroxidation
 (lipid; methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
IT Alzheimer's disease
 Blood analysis
 Body fluid
 Cerebrospinal fluid
 Diagnosis
 Immunoassay
 Inflammation
 Urine analysis
 (methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
IT Antioxidants
 (mol. markers; methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
IT 39391-18-9, Cyclooxygenase
 RL: ADV (Adverse effect, including toxicity); ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
IT 78-44-4, Isoprotane
 RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (mol. markers; methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
IT 7782-44-7, Oxygen, biological studies
 RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (reactive; methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
 (1) Adiyaman; Analytical Biochemistry 1998, V262(1), P45 HCAPLUS
 (2) Morrow; US 5891622 A 1999 HCAPLUS
 (3) Morrow; Prog Lipid Research 1997, V36(1), P1 HCAPLUS
 (4) Practico; FASEB Journal 1998, V12(15), P1777
 (5) Practico; Proc Natl Acad Sci USA 1998, V95(7), P3449
 (6) Roberts; US 5858696 A 1999 HCAPLUS
 (7) Roberts; US 5945295 A 1999 HCAPLUS
IT 39391-18-9, Cyclooxygenase
 RL: ADV (Adverse effect, including toxicity); ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
RN 39391-18-9 HCAPLUS
CN Synthetase, prostaglandin endoperoxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT 78-44-4, Isoprotane
 RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
 (mol. markers; methods and compns. for detg. lipid peroxidn. levels in oxidant stress syndromes and diseases)
RN 78-44-4 HCAPLUS
CN Carbamic acid, (1-methylethyl)-, 2-[[[aminocarbonyl]oxy]methyl]-2-methylpentyl ester (9CI) (CA INDEX NAME)



IT 7782-44-7, Oxygen, biological studies
 RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study);
 BIOL (Biological study); OCCU (Occurrence)
 (reactive; methods and compns. for detg. lipid peroxidn. levels in
 oxidant stress syndromes and diseases)
 RN 7782-44-7 HCAPLUS
 CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L64 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:379840 HCAPLUS
 DN 131:228560
 TI **Isoprostanes**: Chemistry and biological significance
 AU **Rokach, Joshua**; Khanapure, Subhash P.; Hwang, Seong-Woo;
 Adiyaman, Mustafa; Elmir, Zaher; Lawson, John A.; **FitzGerald, Garret**
A.
 CS Claude Pepper Institute and Department of Chemistry, Florida Institute of
 Technology, Melbourne, FL, 32901, USA
 SO Recent Res. Dev. Org. Chem. (1998), 2(Pt. 2), 393-407
 CODEN: RDOCFJ
 PB Transworld Research Network
 DT Journal; General Review
 LA English
 CC 26-0 (Biomolecules and Their Synthetic Analogs)
 AB A review with 53 refs.
 ST **review isoprostane** chem biol
 IT Prostaglandins
 RL: BPR (Biological process); SPN (Synthetic preparation); BIOL
 (Biological study); PREP (Preparation); PROC (Process)
 (**isoprostanes**; chem. and biol. significance of
isoprostanes)
 RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Adams, J; J Am Chem Soc 1985, V107, P464 HCAPLUS
 (2) Adiyaman, M; Tetrahedron Lett 1996, V37, P4849 HCAPLUS
 (3) Adiyaman, M; Tetrahedron Lett 1997, V38, P3339 HCAPLUS
 (4) Andrioli, G; Thromb Haemostasis 1997, V1(Supplement), P844
 (5) Anon; Unpublished results
 (6) Beckwith, A; J Chem Soc Chem Commun 1980, V484
 (7) Beckwith, A; Tetrahedron 1985, V41, P3925 HCAPLUS
 (8) Corey, E; Tetrahedron Lett 1984, V25, P5013 HCAPLUS
 (9) Delanty, N; Circulation 1997, V95, P2492 HCAPLUS
 (10) Fitzsimmons, B; J Biol Chem 1985, V260, P13008 HCAPLUS
 (11) Fitzsimmons, B; Tetrahedron Lett 1985, V26, P3939 HCAPLUS
 (12) Fukunaga, M; J Am Soc Nephrol 1993, V4, P106P
 (13) Guengerich, F; J Biol Chem 1991, V266, P10019 HCAPLUS
 (14) Hecker, M; Eur J Biochem 1987, V169, P113 HCAPLUS
 (15) Hennekens, C; N Engl J Med 1996, V334, P1145 HCAPLUS
 (16) Hwang, S; J Am Chem Soc 1994, V116, P10829 HCAPLUS
 (17) Hwang, S; Tetrahedron Lett 1996, V37, P779 HCAPLUS
 (18) Kaygairich, K; J Lipid Res 1993, V34, P1229
 (19) Larock, R; J Am Chem Soc 1991, V113, P7815 HCAPLUS
 (20) Leblanc, Y; Tetrahedron Lett 1985, V26, P1399 HCAPLUS
 (21) Meagher, E; J Invest Med 1996, V44, P223

- (22) Morrow, J; Anal Biochem 1990, V184, P1 MEDLINE
(23) Morrow, J; Free Radic Biol Med 1991, V10, P195 HCAPLUS
(24) Morrow, J; N Engl J Med 1995, V332, P1198 HCAPLUS
(25) Morrow, J; Proc Natl Acad Sci 1990, V87, P9383 HCAPLUS
(26) Morrow, J; Prostaglandins 1992, V44, P155 HCAPLUS
(27) Mulzer, J; Liebig's Ann Chem 1994, P531 HCAPLUS
(28) Nanji, A; J Pharmacol Exp Ther 1994, V269, P1280 HCAPLUS
(29) Omenn, G; N Engl J Med 1996, V334, P1150 HCAPLUS
(30) O'Connor, D; J Am Chem Soc 1984, V106, P3577 HCAPLUS
(31) Pace-Asciak, C; Biochim Biophys Acta 1985, V836, P153 HCAPLUS
(32) Patrignani, P; J Pharmacol 1996, V118, P1285 HCAPLUS
(33) Porter, N; Lipids 1995, V30, P277 HCAPLUS
(34) Porter, N; Tetrahedron Lett 1984, V25, P807 HCAPLUS
(35) Pratico, D; J Biol Chem 1995, V270, P9800 HCAPLUS
(36) Pratico, D; J Biol Chem 1996, V271, P14916 HCAPLUS
(37) Pratico, D; J Biol Chem 1996, V271, P8919 HCAPLUS
(38) Rapola, J; Lancet 1997, V349, P1715 HCAPLUS
(39) Reilly, M; Circulation 1996, V94, P19 HCAPLUS
(40) Rokach, J; Acc Chem Res 1985, V18, P87 HCAPLUS
(41) Rokach, J; Int J Biochem 1988, V20, P753 HCAPLUS
(42) Rokach, J; Leukotrienes and Lipoxygenases Chemical Biological and Clinical Aspects 1989, V11, P1
(43) Rondot, B; Tetrahedron Lett 1993, V34, P8245 HCAPLUS
(44) Samuelsson, B; Lipid Metabolism 1970, P107
(45) Sano, M; N Engl J Med 1997, V336, P1216 HCAPLUS
(46) Stampfer, M; N Engl J Med 1993, V328, P1444 MEDLINE
(47) Stephens, N; Lancet 1996, V347, P781 HCAPLUS
(48) Taber, D; J Org Chem 1997, V62, P194 HCAPLUS
(49) Taber, D; Jackson Prostaglandins 1997, V53, P63 HCAPLUS
(50) Vionnet, J; Helv Chim Acta 1994, V77, P1781 HCAPLUS
(51) Willis, A; CRC Handbook of Eicosanoids: Prostaglandins and Related Lipids 1987, V1
(52) Willis, A; CRC Handbook of Eicosanoids: Prostaglandins and Related Lipids 1987, V1
(53) Yua, T; Advances in Prostaglandin Thromboxane and Leukotriene Research 1995, V23, P237

L64 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:36425 HCAPLUS

DN 130:250679

TI Increased formation of distinct F2 isoprostanes in hypercholesterolemia

AU Reilly, Muredach P.; Pratico, Domenico; Delanty, Norman; DiMinno, Giovanni; Tremoli, Elena; Rader, Daniel; Kapoor, Shiv; Rokach, Joshua; Lawson, John; FitzGerald, Garret A.

CS Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia, PA, USA

SO Circulation (1998), 98(25), 2822-2828
CODEN: CIRCAZ; ISSN: 0009-7322

PB Lippincott Williams & Wilkins

DT Journal

LA English

CC 14-14 (Mammalian Pathological Biochemistry)

Section cross-reference(s): 2

AB F2 isoprostanes are stable, free radical-catalyzed products of arachidonic acid that reflect lipid peroxidn. in vivo. Specific assays were developed by use of mass spectrometry for the F2 isoprostanes iPF2.alpha.-III and iPF2.alpha.-VI and arachidonic acid (AA). Urinary excretion of the two F2 isoprostanes was increased in hypercholesterolemic patients, whereas substrate AA in urine did not differ between the groups. iPF2.alpha.-III (pmol/mmol creatinine) was elevated in homozygous familial hypercholesterolemic (HFH) patients (85) compared with age- and sex-matched normocholesterolemic control subjects (58), as were levels of iPF2.alpha.-VI (281 vs. 175). Serum cholesterol correlated with urinary iPF2.

alpha.-III and iPF2.alpha.-VI in HFH patients. Urinary excretion of iPF2.alpha.-III (81 vs. 59) and iPF2.alpha.-VI (195 vs. 149) was also increased in moderately hypercholesterolemic subjects compared with their controls. Urinary excretion of iPF2.alpha.-III and iPF2.alpha.-VI was correlated. LDL iPF2.alpha.-III levels (ng/mg arachidonate) were elevated in HFH patients compared with controls. The concns. of iPF2-III in LDL and urine were significantly correlated in HFH patients. Thus asymptomatic patients with moderate and severe hypercholesterolemia have evidence of oxidant stress in vivo.

ST F2 isoprostane blood urine hypercholesterolemia oxidant stress
IT Low-density lipoproteins
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(iPF2.alpha.-III-contg.; increased formation of distinct F2 isoprostanes in hypercholesterolemia in humans)

IT Hypercholesterolemia
Lipid peroxidation
Oxidative stress (biological)
Urine
(increased formation of distinct F2 isoprostanes in hypercholesterolemia in humans)

IT Blood cholesterol
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(increased formation of distinct F2 isoprostanes in hypercholesterolemia in humans)

IT 506-32-1, Arachidonic acid 180469-63-0 190664-75-6, IPF2.alpha.-III
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(increased formation of distinct F2 isoprostanes in hypercholesterolemia in humans)

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Adiyaman, M; Tetrahedron Lett 1996, V37, P4849 HCAPLUS
- (2) Catella, F; Proc Natl Acad Sci U S A 1986, V83, P5861 HCAPLUS
- (3) Cathcart, M; In Vitro Cell Dev Biol 1988, V24, P1001 HCAPLUS
- (4) Davi, G; Arterioscler Thromb Vasc Biol 1997, V17, P3230 MEDLINE
- (5) Delanty, N; Circulation 1997, V95, P2492 HCAPLUS
- (6) FitzGerald, G; Circulation 1983, V67, P1174 HCAPLUS
- (7) FitzGerald, D; Circulation 1988, V77, P142 MEDLINE
- (8) FitzGerald, D; Circulation 1988, V77, P142 MEDLINE
- (9) FitzGerald, D; N Engl J Med 1986, V315, P983 MEDLINE
- (10) Frei, B; Biochem J 1991, V277, P133 HCAPLUS
- (11) Fukunaga, M; Am J Physiol 1993, V264, PC1619 HCAPLUS
- (12) Gopaul, N; FEBS Lett 1994, V348, P297 HCAPLUS
- (13) Halliwell, B; Am J Clin Nutr 1993, V57(suppl), P715S
- (14) Hennekens, C; N Engl J Med 1996, V334, P1145 HCAPLUS
- (15) Hertog, M; Lancet 1993, V324, P1007
- (16) ISIS-2 (Second International Study Group of Infarct Survival) Collaborative Group; Lancet 1988, V2, P349
- (17) Kerins, D; Drugs 1991, V41, P665 MEDLINE
- (18) Lewis, H; N Engl J Med 1983, V309, P396
- (19) Lowry, O; J Biol Chem 1951, V193, P265 HCAPLUS
- (20) Lynch, S; J Clin Invest 1994, V93, P998 HCAPLUS
- (21) Maggi, E; Arterioscler Thromb Vasc Biol 1994, V14, P1892 MEDLINE
- (22) Morrow, J; J Clin Invest 1992, V90, P2502 HCAPLUS
- (23) Morrow, J; Proc Natl Acad Sci 1990, V87, P9383 HCAPLUS
- (24) Morrow, J; Proc Natl Acad Sci U S A 1992, V89, P10721 HCAPLUS
- (25) Nowak, J; Circulation 1987, V76, P6 HCAPLUS
- (26) Patrono, C; Arterioscler Thromb Vasc Biol 1997, V17, P2309 HCAPLUS
- (27) Pratico, D; J Biol Chem 1995, V270, P9800 HCAPLUS

- (28) Pratico, D; J Biol Chem 1996, V271, P14916 HCAPLUS
 (29) Pratico, D; J Biol Chem 1996, V271, P8919 HCAPLUS
 (30) Pratico, D; J Clin Invest 1997, V100, P2028 HCAPLUS
 (31) Pratico, D; J Invest Med 1998, V46, P51 MEDLINE
 (32) Pratico, D; Proc Natl Acad Sci U S A 1998, V95, P3449 HCAPLUS
 (33) Pratico, D; To be published in Am Rev Respir Dis
 (34) Rapola, J; Lancet 1997, V349, P1715 HCAPLUS
 (35) Reilly, M; Circulation 1996, V94, P19 HCAPLUS
 (36) Reilly, M; Circulation 1997, V96, P3314 MEDLINE
 (37) Rimm, E; N Engl J Med 1993, V328, P1450 MEDLINE
 (38) Rokach, J; Prostaglandins 1997, V54, P823 HCAPLUS
 (39) Rokach, J; Prostaglandins 1998, V54, P823
 (40) Smith, W; J Biol Chem 1996, V271, P33157 HCAPLUS
 (41) Stampfer, M; N Engl J Med 1993, V328, P1444 MEDLINE
 (42) Steinberg, D; N Engl J Med 1989, V320, P915 HCAPLUS
 (43) Stephens, N; Lancet 1996, V347, P781 HCAPLUS
 (44) Wang, Z; J Pharm Exp Ther 1995, V275, P94 HCAPLUS
 (45) Waugh, R; J Am Soc Mass Spectrom 1996, V7, P490 HCAPLUS
 (46) Witztum, J; Lancet 1994, V344, P793 MEDLINE
 IT 180469-63-0 190664-75-6, IPF2.alpha.

-III

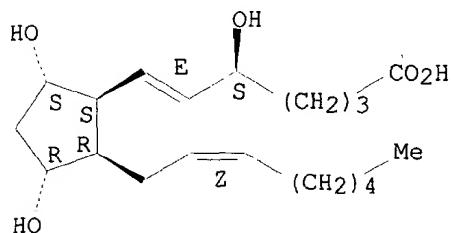
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU
 (Occurrence)

(increased formation of distinct F2 isoprostanes in
 hypercholesterolemia in humans)

RN 180469-63-0 HCAPLUS

CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
 (5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

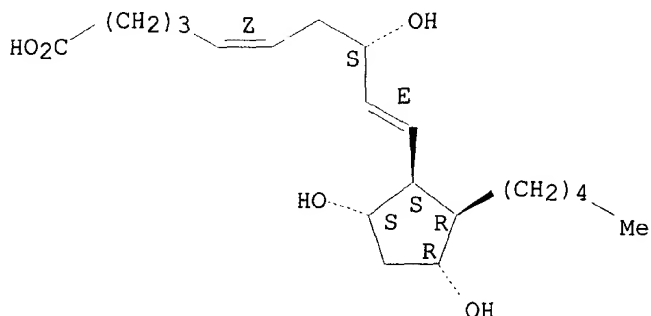
Absolute stereochemistry. Rotation (-).
 Double bond geometry as shown.



RN 190664-75-6 HCAPLUS

CN 5,9-Decadienoic acid, 10-[(1S,2R,3R,5S)-3,5-dihydroxy-2-pentylcyclopentyl]-
 8-hydroxy-, (5Z,8S,9E)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
 Double bond geometry as shown.



AN 1998:801898 HCAPLUS
 DN 130:166709
 TI Increased F2-isoprostanes in Alzheimer's disease:
 evidence for enhanced lipid peroxidation in vivo
 AU Pratico, Domenico; Lee, Virginia M.-Y.; Trojanowski, John
 Q.; Rokach, Joshua; Fitzgerald, Garret A.
 CS The Center for Experimental Therapeutics, School of Medicine, University
 of Pennsylvania, Philadelphia, PA, 19104, USA
 SO FASEB J. (1998), 12(15), 1777-1783
 CODEN: FAJOEC; ISSN: 0892-6638
 PB Federation of American Societies for Experimental Biology
 DT Journal
 LA English
 CC 14-10 (Mammalian Pathological Biochemistry)
 AB Alzheimer's disease (AD) includes a group of dementing neurodegenerative
 disorders that have diverse etiologies but the same hallmark brain
 lesions. Since oxidative stress may play a role in the pathogenesis of AD
 and isoprostanes are chem. stable peroxidn. products of
 arachidonic acid, the authors measured both iPF2.alpha
 .-III and iPF2.alpha.-VI using gas
 chromatog.-mass spectrometry in AD and control brains. The levels of both
 isoprostanes, but not of 6-keto PGF1.alpha., an index of
 prostaglandin prodn., were markedly elevated in both frontal and temporal
 poles of AD brains compared to the corresponding cerebella. Levels were
 also elevated compared to corresponding areas of brains from patients who
 had died with schizophrenia or Parkinson's disease or from
 nonneuropsychiatric disorders. IPF2.alpha.-IV, but
 not iPF2.alpha.-III, levels were higher in
 ventricular CSF of AD brains relative to the non-AD brains. These data
 suggest that specific isoprostane anal. may reflect increased
 oxidative stress in AD.
 ST isoprostane brain Alzheimer disease lipid peroxidn
 IT Brain
 (areas; increased brain F2-isoprostanes in Alzheimer's
 disease in humans in relation to lipid peroxidn.)
 IT Alzheimer's disease
 Cerebellum
 Frontal cortex
 Lipid peroxidation
 Oxidative stress (biological)
 Parkinson's disease
 Schizophrenia
 Temporal cortex
 (increased brain F2-isoprostanes in Alzheimer's disease in
 humans in relation to lipid peroxidn.)
 IT Prostaglandins
 RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation,
 nonpreparative)
 (increased brain F2-isoprostanes in Alzheimer's disease in
 humans in relation to lipid peroxidn.)
 IT Cerebrospinal fluid
 (ventricular; increased brain F2-isoprostanes in Alzheimer's
 disease in humans in relation to lipid peroxidn.)
 IT 506-32-1D, Arachidonic acid, peroxidn. products 27415-26-5
 58962-34-8, 6-Keto PGF1.alpha. 180469-63-0
 RL: BOC (Biological occurrence); BIOL (Biological study); OCCU
 (Occurrence)
 (increased brain F2-isoprostanes in Alzheimer's disease in
 humans in relation to lipid peroxidn.)
 IT 35121-78-9, PGI2
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (increased brain F2-isoprostanes in Alzheimer's disease in
 humans in relation to lipid peroxidn.)
 RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Arnold, S; Am J Psych 1995, V152, P731 MEDLINE

- (2) Awad, J; J Biol Chem 1993, V268, P4161 HCAPLUS
- (3) Balazs, L; Neurochem Res 1994, V19, P1131 HCAPLUS
- (4) Behl, C; Cell 1994, V77, P817 HCAPLUS
- (5) Busciglio, J; Neuron 1995, V14, P879 HCAPLUS
- (6) Delanty, N; Circulation 1997, V95, P2492 HCAPLUS
- (7) Dyrks, T; FEBS Lett 1993, V324, P231 HCAPLUS
- (8) Frederikse, P; J Biol Chem 1996, V272, P10169
- (9) Goedert, M; The Molecular and Genetic Basis of Neurological Disease 2nd Ed 1997, P613
- (10) Gotz, M; Pharmacol Ther 1994, V63, P37 MEDLINE
- (11) Gutteridge, J; Trends Biochem Sci 1990, V15, P129 HCAPLUS
- (12) Hardy, J; Proc Natl Acad Sci USA 1997, V94, P2095 HCAPLUS
- (13) Hayn, M; Life Sci 1996, V59, P537 HCAPLUS
- (14) Kaufmann, W; Prostaglandins 1997, V54, P601 HCAPLUS
- (15) Lovell, M; Neurobiol Aging 1997, V18, P457 HCAPLUS
- (16) Lovell, M; Neurology 1995, V45, P1594 HCAPLUS
- (17) Lyras, L; J Neurochem 1997, V68, P2061 HCAPLUS
- (18) Markesbery, W; Free Rad Biol Med 1997, V23, P134 HCAPLUS
- (19) Mattson, M; Neuroscience 1992, V12, P376 HCAPLUS
- (20) McGeer, P; Neurology 1992, V42, P447 MEDLINE
- (21) Mecocci, P; Ann Neurol 1994, V36, P747 MEDLINE
- (22) Miyata, M; Nature Genet 1996, V14, P55 HCAPLUS
- (23) Montine, K; J Neuropathol Exp Neurol 1997, V56, P866 MEDLINE
- (24) Morrison-Bogorad, M; The Molecular and Genetic Basis of Neurological Disease 2nd Ed 1997, P581
- (25) Morrow, J; Proc Natl Acad Sci USA 1992, V89, P10721 HCAPLUS
- (26) Ogorochi, T; J Neurochem 1984, V43, P71 HCAPLUS
- (27) Palmer, A; Brain Res 1994, V645, P338 HCAPLUS
- (28) Patrono, C; Arterioscler Thromb Vasc Biol 1997, V17, P2309 HCAPLUS
- (29) Pratico, D; J Biol Chem 1995, V270, P9800 HCAPLUS
- (30) Pratico, D; J Biol Chem 1996, V271, P8919 HCAPLUS
- (31) Pratico, D; J Clin Invest 1997, V100, P2027
- (32) Pratico, D; Nature Med 1998, V4, P1189 HCAPLUS
- (33) Pratico, D; Proc Natl Acad Sci USA 1998, V95, P3449 HCAPLUS
- (34) Reilly, M; Circulation 1996, V94, P19 HCAPLUS
- (35) Reilly, M; Circulation 1998, V96, P3314
- (36) Reilly, M; Circulation In press 1998
- (37) Roberts, L; J Biol Chem 1998, V273, P13605 HCAPLUS
- (38) Rokach, J; Prostaglandins 1997, V54, P823 HCAPLUS
- (39) Rokach, J; Prostaglandins 1997, V54, P853 HCAPLUS
- (40) Sano, M; N Engl J Med 1997, V336, P1216 HCAPLUS
- (41) Sayre, L; J Neurochem 1997, V68, P2092 HCAPLUS
- (42) Scheuner, D; Nature Med 1996, V2, P864 HCAPLUS
- (43) Schmidt, M; Acta Neuropathol 1996, V91, P475 MEDLINE
- (44) Schmidt, M; Lab Invest 1991, V64, P352 MEDLINE
- (45) Selkoe, D; Science 1997, V275, P630 HCAPLUS
- (46) Smith, C; Proc Natl Acad Sci USA 1991, V88, P10540 HCAPLUS
- (47) Smith, M; Nature (London) 1996, V382, P120 HCAPLUS
- (48) Stewart, W; Neurology 1997, V48, P626 MEDLINE
- (49) Subbarao, K; J Neurochem 1990, V55, P342 HCAPLUS
- (50) Thomas, T; Nature (London) 1996, V380, P168 HCAPLUS
- (51) van Duijn, C; J Neurol Neurosurg Psychiatry 1996, V60, P478 MEDLINE

IT 27415-26-5 180469-63-0

RL: BOC (Biological occurrence); BIOL (Biological study); OCCU
(Occurrence)

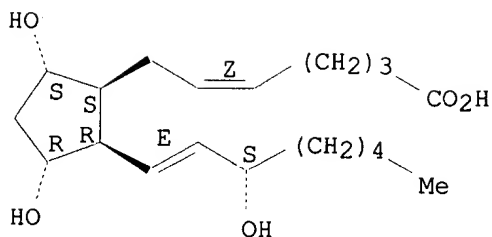
(increased brain F2-isoprostanes in Alzheimer's disease in
humans in relation to lipid peroxidn.)

RN 27415-26-5 HCAPLUS

CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

Double bond geometry as shown.

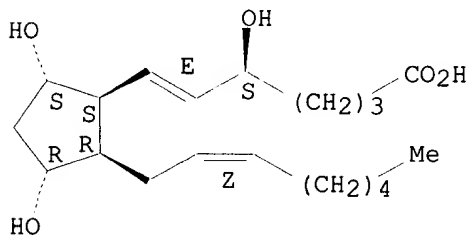


RN 180469-63-0 HCAPLUS

CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

Double bond geometry as shown.



L64 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:736922 HCAPLUS

DN 130:61215

TI **Identification** of two major F2 **isoprostanes**, 8,12-iso-
and 5-epi-8,12-iso-**isoprostane** F2.alpha.-VI, in human urine

AU Lawson, John A.; Li, Hongwei; **Rokach, Joshua**; Adiyaman, Mustafa;
Hwang, Seong-Woo; Khanapure, Subhash P.; **FitzGerald, Garret A.**

CS Center for Experimental Therapeutics, University of Pennsylvania,
Philadelphia, PA, 19104-6100, USA

SO J. Biol. Chem. (1998), 273(45), 29295-29301

CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

LA English

CC 2-1 (Mammalian Hormones)

AB **Isoprostanes** (iPs) are nonenzymic, free radical-derived compds. isomeric with enzymically formed eicosanoids such as prostaglandins, leukotrienes, and thromboxanes. One group formed by the auto-oxidn. of arachidonic acid, the F2-iPs, consists of four classes of isomers of prostaglandin F2.alpha. (PGF2.alpha.). They are relatively abundant in human urine. This fact, along with their chem. stability and excellent characteristics for quantitation by gas chromatog./mass spectrometry, has made them attractive indexes of oxidative stress in humans. We developed a specific assay using gas chromatog./mass spectrometry for the first identified F2-iP, **iPF2.alpha.-III** (previously called 8-iso-PGF2.alpha. or 8-epi-PGF2.alpha.), which demonstrated the utility of monitoring a specific isomer. Recently, we described an assay for another isomer, **iPF2.alpha.-VI**, which is present in urine in greater concn. than **iPF2.alpha.-III** and which is particularly amenable to quantitation. We now describe the identification in human urine of two more isomers, 8,12-iso-**iPF2.alpha.-VI** and 5-epi-8,12-iso-**iPF2.alpha.-VI**, using high performance liq. chromatog./tandem

mass spectrometry and gas chromatog./mass spectrometry. These compds. are each present in .apprx.5-fold greater concns. than **iPF2**.

alpha.-VI (.apprx.20-fold greater than **iPF2**.

alpha.-III). They share the unique chem.

characteristics of class **VI** compds., which make them attractive targets for quantitation by gas chromatog./mass spectrometry and immunoassay development.

ST **isoprostane** F2 detn urine; gas chromatog **isoprostane**

F2 urine; mass spectrometry **isoprostane** F2 urine

IT Gas chromatography

Mass spectrometry

Urine

Urine analysis

(8,12-iso- and 5-epi-8,12-iso-**isoprostane** F2.alpha.-VI

detection in human urine by gas chromatog./mass spectrometry)

IT Prostanoids

RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study);

BIOL (Biological study); OCCU (Occurrence)

(**isoprostanes**; 8,12-iso- and 5-epi-8,12-iso-

isoprostane F2.alpha.-VI detection in human urine by gas

chromatog./mass spectrometry)

IT **27415-26-5**, 8-Iso-PGF2.alpha. **180469-63-0** 197151-20-5

214894-56-1

RL: ANT (Analyte); BOC (Biological occurrence); ANST

(Analytical study); BIOL (Biological study); OCCU

(Occurrence)

(8,12-iso- and 5-epi-8,12-iso-**isoprostane** F2.alpha.-VI

detection in human urine by gas chromatog./mass spectrometry)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Davi, G; Arterioscler Thromb Vasc Biol 1997, V17, P3230 MEDLINE

(2) Delanty, N; Circulation 1997, V95, P2492 HCAPLUS

(3) Foster, A; Biochim Biophys Acta 1987, V921, P486 HCAPLUS

(4) Iuliano, L; Blood 1997, V90, P3931 HCAPLUS

(5) Morrow, J; Anal Biochem 1990, V184, P1 MEDLINE

(6) Morrow, J; N Engl J Med 1995, V332, P1198 HCAPLUS

(7) Morrow, J; Proc Natl Acad Sci U S A 1992, V89, P10721 HCAPLUS

(8) O'Connor, D; J Am Chem Soc 1984, V106, P3577 HCAPLUS

(9) Patrono, C; Arterioscler Thromb Vasc Biol 1997, V17, P2309 HCAPLUS

(10) Pratico, D; J Biol Chem 1995, V270, P9800 HCAPLUS

(11) Pratico, D; J Clin Invest 1997, V100, P2028 HCAPLUS

(12) Pratico, D; Proc Natl Acad Sci U S A 1998, V95, P3449 HCAPLUS

(13) Reilly, M; Circulation 1996, V94, P19 HCAPLUS

(14) Reilly, M; Circulation 1997, V96, P3314 MEDLINE

(15) Reilly, M; to be published in Circulation 1998

(16) Roberts, L; J Biol Chem 1996, V271, P20617 HCAPLUS

(17) Rokach, J; J Allergy Clin Immunol 1990, V86, P211

(18) Rokach, J; Prostaglandins 1997, V54, P823 HCAPLUS

(19) Rokach, J; Prostaglandins 1997, V54, P853 HCAPLUS

(20) Sala, A; J Biol Chem 1990, V265, P21771 HCAPLUS

(21) Stene, D; J Biol Chem 1988, V263, P2773 HCAPLUS

(22) Tagari, P; Prostaglandins 1989, V37, P629 HCAPLUS

(23) Wang, Z; J Pharmacol Exp Ther 1995, V275, P94 HCAPLUS

(24) Waugh, R; Free Radical Biol Med 1997, V23, P943 HCAPLUS

(25) Wendelborn, D; Proc Natl Acad Sci U S A 1988, V85, P304 HCAPLUS

IT **27415-26-5**, 8-Iso-PGF2.alpha. **180469-63-0**

214894-56-1

RL: ANT (Analyte); BOC (Biological occurrence); ANST

(Analytical study); BIOL (Biological study); OCCU

(Occurrence)

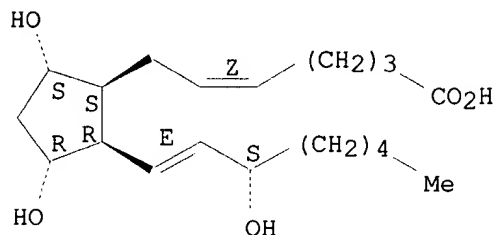
(8,12-iso- and 5-epi-8,12-iso-**isoprostane** F2.alpha.-VI

detection in human urine by gas chromatog./mass spectrometry)

RN **27415-26-5** HCAPLUS

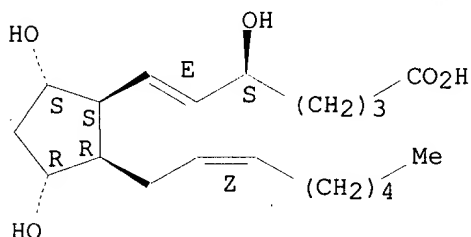
CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



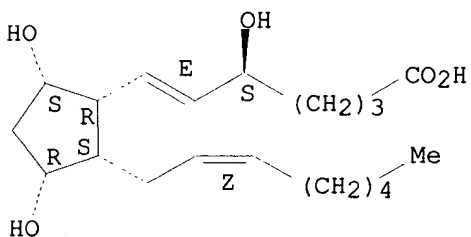
RN 180469-63-0 HCAPLUS
CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



RN 214894-56-1 HCAPLUS
CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,9.alpha.,11.alpha.,12.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

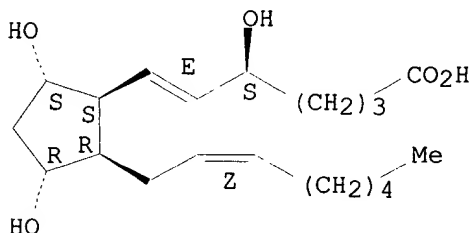


L64 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:618099 HCAPLUS
DN 129:310983
TI Total synthesis of 17,17,18,18-d4-iPF2.alpha.-
VI and quantification of iPF2.alpha
.-VI in human urine by gas chromatography/mass spectrometry
AU Adiyaman, Mustafa; Lawson, John A.; Khanapure, Subhash P.;
FitzGerald, Garret A.; Rokach, Joshua
CS Claude Pepper Institute and Department of Chemistry, Florida Institute of
Technology, Melbourne, FL, 32901-6975, USA
SO Anal. Biochem. (1998), 262(1), 45-56
CODEN: ANBCA2; ISSN: 0003-2697
PB Academic Press
DT Journal
LA English

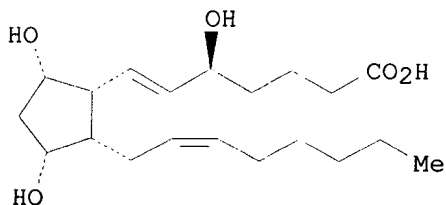
- CC 2-1 (Mammalian Hormones)
Section cross-reference(s): 26
- AB **Isoprostanes** are a new class of natural products formed in humans as a result of free-radical-catalyzed lipid peroxidn. of polyunsatd. fatty acids. These endogenous compds. are isomeric with biol. active prostaglandins and have great promise as markers of oxidant stress in vivo. **IPF2.alpha.-III** (previously 8-iso-PGF2.alpha.), an **isoprostane** from Class **III** (previously known as Class IV), has been used as an index of free-radical-induced oxidative stress. This **isoprostane** is also produced by the cyclooxygenase enzymes COX1 and COX2. The authors are proposing a new reliable index of oxidative stress based on **iPF2.alpha.-VI** (previously **IPF2.alpha.-I**), a new Class **VI isoprostane** the authors recently discovered. The advantages of **iPF2.alpha.-VI** are that it is several fold more abundant in urine than **iPF2.alpha.-III**, hence allowing more accurate detns. Equally, the proximity of the C-5 OH function to the carboxylic acid allows the formation of the lactone 35 which is easier to purify from other iPs which cannot form such lactones. The authors have performed the first total synthesis of **d4-iPF2.alpha.-VI** by using two synthons, (3,3,4,4-d4)-hexylphosphonium bromide 23 prepd. from 5-hexynol and syn-anti-syn lactone 25 synthesized from D-glucose. The authors have developed two variants of a sensitive GC/MS assay using the synthetic **d4-iPF2.alpha.-VI** as an internal std. to det. the levels of endogenous **iPF2.alpha.-VI** in biol. fluids. Quantification of **iPF2.alpha.-VI** formed in vivo may be a more reliable index to assess oxidant stress in humans. (c) 1998 Academic Press.
- ST **isoprostane iPF2alphaVI** urine analysis oxidative stress; **d4 iPF2alpha VI** prepn
- IT Gas chromatography-mass spectrometry
Oxidative stress (biological)
Urine analysis
(total synthesis of 17,17,18,18-d4-**iPF2.alpha.-VI** and quantification of **iPF2.alpha.-VI** in human urine by gas chromatog.-mass spectrometry)
- IT 180469-63-0, **IPF2.alpha.-VI**
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study)
(total synthesis of 17,17,18,18-d4-**iPF2.alpha.-VI** and quantification of **iPF2.alpha.-VI** in human urine by gas chromatog.-mass spectrometry)
- IT 214977-79-4P
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(total synthesis of 17,17,18,18-d4-**iPF2.alpha.-VI** and quantification of **iPF2.alpha.-VI** in human urine by gas chromatog.-mass spectrometry)
- IT 70482-82-5P 70482-83-6P 70482-86-9P, 1-Hexan-3,3,4,4-d4-ol
70482-87-0P 70482-88-1P 214977-83-0P 214977-84-1P 214977-85-2P
214977-86-3P 214977-87-4P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of 17,17,18,18-d4-**iPF2.alpha.-VI** and quantification of **iPF2.alpha.-VI** in human urine by gas chromatog.-mass spectrometry)
- IT 180300-33-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of 17,17,18,18-d4-**iPF2.alpha.-VI** and quantification of **iPF2.alpha.-VI** in human urine by gas chromatog.-mass spectrometry)
- IT 110-87-2, 3,4-Dihydro-2H-pyran 603-35-0, Triphenylphosphine, reactions
1002-28-4, 3-Hexynol 104227-38-5 190390-52-4
RL: RCT (Reactant)

(total synthesis of 17,17,18,18-d4-iPF2.alpha.-
 VI and quantification of iPF2.alpha.-
 VI in human urine by gas chromatog.-mass spectrometry)
 IT 180469-63-0, iPF2.alpha.-VI
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical
 study)
 (total synthesis of 17,17,18,18-d4-iPF2.alpha.-
 VI and quantification of iPF2.alpha.-
 VI in human urine by gas chromatog.-mass spectrometry)
 RN 180469-63-0 HCAPLUS
 CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
 (5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
 Double bond geometry as shown.



L64 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:603895 HCAPLUS
 DN 129:316057
 TI Syntheses and **identification** of the most abundant urinary type
 VI **isoprostanes**
 AU Adiyaman, Mustafa; Lawson, John A.; FitzGerald, Garret A.;
 Rokach, Joshua
 CS Claude Pepper Inst. Dep. Chem., Florida Inst. Technol., Melbourne, FL,
 32901, USA
 SO Tetrahedron Lett. (1998), 39(39), 7039-7042
 CODEN: TELEAY; ISSN: 0040-4039
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 CC 26-3 (Biomolecules and Their Synthetic Analogs)
 Section cross-reference(s): 13
 GI



AB The total synthesis of **8-12-iso-iPF2**
.alpha.-VI (I) and its 5 epimer is described. With
 the aid of the synthetic materials these **isoprostanes** have been
 identified in and isolated from human urine.
 ST urinary **isoprostane** prepn
 IT Prostaglandins
 RL: BOC (Biological occurrence); SPN (Synthetic preparation); BIOL
 (Biological study); OCCU (Occurrence); PREP (Preparation)

(syntheses and identification of most abundant urinary type VI
isoprostanes)

IT 197151-20-5P **214894-56-1P**
RL: BOC (Biological occurrence); SPN (Synthetic preparation); BIOL
(Biological study); **OCCU (Occurrence)**; PREP (Preparation)
(syntheses and identification of most abundant urinary type VI
isoprostanes)

IT 4762-26-9 104227-38-5 214894-60-7
RL: RCT (Reactant)
(syntheses and identification of most abundant urinary type VI
isoprostanes)

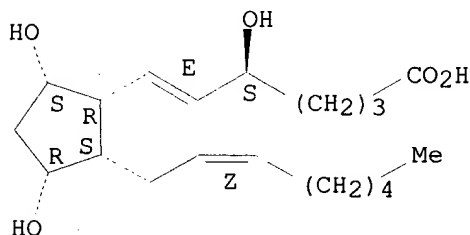
IT 214894-63-0P 214894-67-4P 214894-72-1P 214894-75-4P 214894-77-6P
214894-79-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(syntheses and identification of most abundant urinary type VI
isoprostanes)

IT 214894-69-6P 214894-81-2P 214894-83-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(syntheses and identification of most abundant urinary type VI
isoprostanes)

IT **214894-56-1P**
RL: BOC (Biological occurrence); SPN (Synthetic preparation); BIOL
(Biological study); **OCCU (Occurrence)**; PREP (Preparation)
(syntheses and identification of most abundant urinary type VI
isoprostanes)

RN 214894-56-1 HCAPLUS
CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,9.alpha.,11.alpha.,12.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

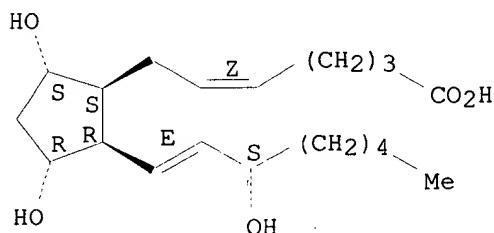


L64 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:369114 HCAPLUS
DN 129:144890
TI Cellular activation by thromboxane A2 and 8-epi-PGF2.alpha.
AU **Pratico, Domenico**; O'mahony, Dan; Lawson, John; Kinsella,
Therese; **Fitzgerald, Garret A.**
CS Centre for Cardiovascular Science, Dept. of Medicine and Experimental
Therapeutics, University College, Dublin, Ire.
SO Adv. Exp. Med. Biol. (1997), 400A(Eicosanoids and Other
Bioactive Lipids in Cancer, Inflammation, and Radiation Injury 2, Pt. A),
229-233
CODEN: AEMBAP; ISSN: 0065-2598
PB Plenum Publishing Corp.
DT Journal; General Review
LA English
CC 2-0 (Mammalian Hormones)
AB A review with 14 refs. of the title subject. Thromboxane A2 is the
predominant cyclooxygenase product of arachidonic acid in human platelets
with potent vasoconstrictor and platelet activating properties.
8-Epi-PGF2.alpha., a free radical catalyzed PGF isomer, possesses
vasoconstrictor and mitogenic properties. In contrast to TxA2, it induces
platelet shape change, but not aggregation. Although the biol. effects of

this compd. are prevented by Tx antagonists, biochem. evidence has been presented that it acts preferentially via a related, but distinct receptor from that for TxA₂.

ST **review** cellular activation thromboxane PGF₂ isomer
 IT Platelet (blood)
 (cellular activation by thromboxane A₂ and 8-epi-PGF₂.alpha.)
 IT Thromboxane receptors
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
 (cellular activation by thromboxane A₂ and 8-epi-PGF₂.alpha.)
 IT **27415-26-5**, 8-epi-PGF₂.alpha. 57576-52-0, Thromboxane A₂
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
 (cellular activation by thromboxane A₂ and 8-epi-PGF₂.alpha.)
 IT **27415-26-5**, 8-epi-PGF₂.alpha.
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
 (cellular activation by thromboxane A₂ and 8-epi-PGF₂.alpha.)
 RN 27415-26-5 HCAPLUS
 CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
 (5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
 Double bond geometry as shown.

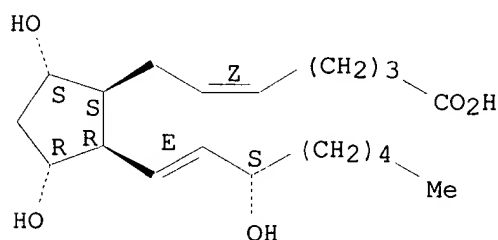


L64 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:236003 HCAPLUS
 DN 129:662
 TI IPF2.alpha.-I: an **index** of lipid peroxidation in humans
 AU **Pratico, Domenico**; Barry, Orla P.; Lawson, John A.; Adiyaman, Mustafa; Hwang, Seong-Woo; Khanapure, Subhash P.; Iuliano, Luigi; **Rokach, Joshua**; **Fitzgerald, Garret A.**
 CS Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia, PA, 19104-6100, USA
 SO Proc. Natl. Acad. Sci. U. S. A. (1998), 95(7), 3449-3454
 CODEN: PNASA6; ISSN: 0027-8424
 PB National Academy of Sciences
 DT Journal
 LA English
 CC 2-1 (Mammalian Hormones)
 Section cross-reference(s): 4
 AB **Isoprostanes** are prostaglandin isomers produced from arachidonic acid by a free radical-catalyzed mechanism. Urinary excretion of 8-iso-prostaglandin F₂.alpha., an isomer of the PGG/H synthase (cyclooxygenase or COX) enzyme product, prostaglandin F₂.alpha. (PGF₂.alpha.), has exhibited promise as an index of oxidant stress in vivo. The authors have developed a quant. to measure **isoprostane** F₂.alpha.-I, (IPF2.alpha.-I) a class I isomer (8-iso-PGF₂.alpha. is class IV), using gas chromatog./mass spectrometry. IPF2.alpha.-I is severalfold as abundant in human urine as 8-iso-PGF₂.alpha., with mean values of 737 pg/mg creatinine. Both **isoprostanes** are formed in a free radical-dependent manner in low d. lipoprotein oxidized by copper in vitro. However, IPF2.alpha.-I, unlike 8-iso-PGF₂.alpha., is not formed in a COX-dependent manner by platelets activated by thrombin or collagen in

vitro. Similarly, COX inhibition in vivo has no effect on IPF2.alpha.-I. Neither serum IPF2.alpha.-I, an index of cellular capacity to generate the **isoprostane**, nor urinary excretion of IPF2.alpha.-I, an index of actual generation in vivo, is depressed by aspirin or indomethacin. In contrast, both serum thromboxane B2 and urinary excretion of its 11-dehydro metabolite are depressed by the COX inhibitors. Although serum 8-iso-PGF2.alpha. formation is substantially depressed by COX inhibitors, urinary excretion of the compd. is unaffected. Urinary IPF2.alpha.-I is elevated in cigarette smokers compared with controls (1525 vs. 740 pg/mg creatinine) and is highly correlated with urinary 8-iso-PGF2.alpha. (r = 0.9). Urinary IPF2.alpha.-I is a novel index of lipid peroxidn. in vivo, which can be measured with precision and sensitivity. It is an abundant F2-**isoprostane** formed in a free radical- but not COX-dependent manner. Although 8-iso-PGF2.alpha. may be formed as a minor product of COX, this pathway contributes trivially, if at all, to levels in urine. Urinary excretion of both **isoprostanes** is elevated in cigarette smokers.

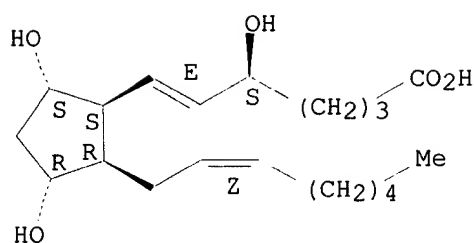
- ST **isoprostane** IPE2alphaI urine analysis lipid peroxidn; oxidative stress **isoprostane** urine cigarette smoke
- IT Lipid peroxidation
Oxidative stress (biological)
Platelet (blood)
Tobacco smoke
Urine analysis
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- IT Low-density lipoproteins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- IT Prostaglandins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- IT **27415-26-5**, 8-Iso-prostaglandin F2.alpha. **180469-63-0**
RL: **ANT (Analyte)**; BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- IT **39391-18-9**, Cyclooxygenase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- IT **27415-26-5**, 8-Iso-prostaglandin F2.alpha. **180469-63-0**
RL: **ANT (Analyte)**; BPR (Biological process); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)
(IPF2.alpha.-I as index of lipid peroxidn. in humans)
- RN 27415-26-5 HCAPLUS
- CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



- RN 180469-63-0 HCAPLUS
- CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



IT 39391-18-9, Cyclooxygenase
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (IPF2.alpha.-I as index of lipid peroxidn. in humans)
 RN 39391-18-9 HCAPLUS
 CN Synthetase, prostaglandin endoperoxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L64 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:176669 HCAPLUS
 DN 128:279019
 TI The **isoprostanes**: a perspective
 AU Rokach, J.; Khanapure, S. P.; Hwang, S.-W.; Adiyaman, M.;
 Lawson, J. A.; Fitzgerald, G. A.
 CS Claude Pepper Institute, Department Chemistry, Florida Institute
 Technology, Melbourne, FL, 32901-6975, USA
 SO Prostaglandins (1997), 54(6), 823-851
 CODEN: PRGLBA; ISSN: 0090-6980
 PB Elsevier Science Inc.
 DT Journal; General Review
 LA English
 CC 2-0 (Mammalian Hormones)
 Section cross-reference(s): 14
 AB A review, with 99 refs. The **isoprostanes** are a new class of
 natural products produced in vivo by a non-enzymic free-radical-induced
 peroxidn. of polyunsatd. fatty acid. In the case of arachidonic acid, for
 example, four classes of **isoprostanes** can be produced. Because
 of the specific structural features distinguishing them from other
 free-radical-generated products, e.g., HETEs, etc., the
isoprostanes can provide an exclusive and selective index for the
 oxidant component of several inflammatory and degenerative diseases. The
 possible mechanisms of formation of the individual **isoprostanes**
 is discussed in detail. Class III products, such as 8-iso-PGF2.alpha.,
 and 8-iso-PGE2 have been shown to be vasoconstrictors and modulate
 platelet function. Several synthetic representatives from the four
 classes of arachidonic-acid-derived **isoprostanes** have already
 been prepd. by total synthesis. These synthetic stds. have been used for
 the identification and quantitation of these **isoprostanes** in
 biol. fluids using gas chromatog./mass spectrometry methodol.
 ST **review isoprostane**
 IT Eicosanoids
 Leukotrienes
 Prostaglandins
 RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or
 effector, except adverse); MFM (Metabolic formation); PRP (Properties);
 BIOL (Biological study); FORM (Formation, nonpreparative)

L64 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:24859 HCAPLUS
 DN 128:87111
 TI **Isoprostanes**: potential **markers** of oxidant stress in
 atherothrombotic disease
 AU Patrono, Carlo; Fitzgerald, Garret A.
 CS Center for Experimental Therapeutics and Department of Pharmacology,

University of Pennsylvania School of Medicine, Philadelphia, PA,
19104-6100, USA

SO Arterioscler., Thromb., Vasc. Biol. (1997), 17(11), 2309-2315
CODEN: ATVBFA; ISSN: 1079-5642

PB American Heart Association

DT Journal; General Review

LA English

CC 14-0 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 4

AB A review, with 65 refs. **Isoprostanes** are emerging as a new class of biol. active products of arachidonic acid metab. of potential relevance to human vascular disease. Their formation in vivo seems to reflect primarily, if not exclusively, a nonenzymic process of lipid peroxidn. Enhanced urinary excretion of 8-iso-PGF2.alpha. has been described in assocn. with cardiac reperfusion injury and with cardiovascular risk factors, including cigarette smoking, diabetes mellitus, and hypercholesterolemia. Besides providing a likely noninvasive index of lipid peroxidn. in these settings, measurements of specific F2 **isoprostanes** in urine may provide a sensitive biochem. end point for dose-finding studies of natural and synthetic inhibitors of lipid peroxidn. Although the biol. effects of 8-iso-PGF2.alpha. in vitro suggest that it and other isoeicosanoids may modulate the functional consequences of lipid peroxidn., evidence that this is likely in vivo remains inadequate at this time.

ST **review F2 isoprostane cardiovascular risk diagnosis**

IT Cardiovascular diseases
Diabetes mellitus
Diagnosis
Hypercholesterolemia
Lipid peroxidation
Oxidative stress (biological)
Tobacco smoke
Urine analysis
Vascular diseases
(**isoprostanes** as potential markers of oxidant stress in atherothrombotic disease)

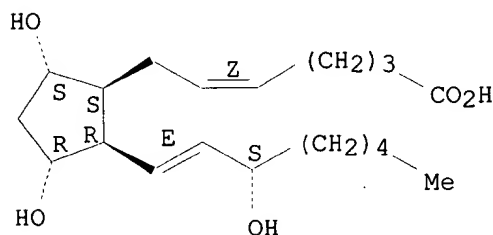
IT 551-11-1D, PGF2.alpha., isomers, F2 **isoprostanes**
27415-26-5, 8-Iso-PGF2.alpha.
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**isoprostanes** as potential markers of oxidant stress in atherothrombotic disease)

IT **27415-26-5**, 8-Iso-PGF2.alpha.
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**isoprostanes** as potential markers of oxidant stress in atherothrombotic disease)

RN 27415-26-5 HCAPLUS

CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



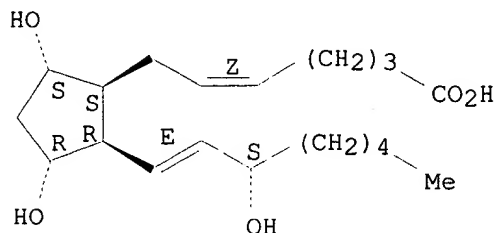
DN 128:58619
TI Cellular responses to eicosanoids: molecular biology of eicosanoid receptors
AU O'Mahony, Daniel J.; Kinsella, B. Therese; **Fitzgerald, Garret A.**
CS Elan Pharmaceutical Technologies, Trinity College, Dublin, Ire.
SO Princ. Med. Biol. (1997), Volume 8B, 385-405. Editor(s):
Bittar, E. Edward; Bittar, Neville. Publisher: JAI Press, Greenwich, Conn.
CODEN: 63ABAW
DT Conference; General Review
LA English
CC 6-0 (General Biochemistry)
AB A review with .apprx.55 refs. on arachidonic acid, prostaglandins, **isoprostanes**, and eicosanoid receptors including thromboxane A2 receptor and EP receptors.
ST **review** eicosanoid receptor arachidonate
IT Eicosanoids
Prostaglandins
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(cellular responses to eicosanoids, mol. biol. of eicosanoid receptors)
IT Receptors
RL: BAC (Biological activity or effector, except adverse); BIOL
(Biological study)
(eicosanoid; cellular responses to eicosanoids, mol. biol. of eicosanoid receptors)
IT 506-32-1, Arachidonic acid
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(cellular responses to eicosanoids, mol. biol. of eicosanoid receptors)

L64 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:676782 HCAPLUS
DN 127:344749
TI Localization of distinct F2-**isoprostanes** in human atherosclerotic lesions
AU **Pratico, Domenico**; Iuliano, Luigi; Mauriello, Alessandro; Spagnoli, Luigi; Lawson, John A.; Macclouf, Jacques; Violi, Francesco; **Fitzgerald, Garret A.**
CS The Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia, PA, 19104, USA
SO J. Clin. Invest. (1997), 100(8), 2028-2034
CODEN: JCINAO; ISSN: 0021-9738
PB Rockefeller University Press
DT Journal
LA English
CC 14-5 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2
AB F2-**Isoprostanes** are prostaglandin (PG) isomers formed in situ in cell membranes by peroxidn. of arachidonic acid. 8-Epi PGF2.alpha. and IPF2.alpha.-I are F2-**isoprostanes** produced in humans which circulate in plasma and are excreted in urine. Measurement of F2-**isoprostanes** may offer a sensitive, specific, and noninvasive method for measuring oxidant stress in clin. settings where reactive oxygen species are putatively involved. The authors detd. whether **isoprostanes** were present in human atherosclerotic lesions, where lipid peroxidn. is thought to occur in vivo. 8-Epi PGF2.alpha. ranged from 1.310-3.450 pmol/.mu.mol phospholipid in atherectomy specimens compared with 0.045-0.115 pmol/.mu.mol phospholipid in vascular tissue devoid of atherosclerosis. Corresponding values of IPF2.alpha.-I were 5.6-13.8 vs. 0.16-0.44 pmol/.mu.mol phospholipid. Levels of the two **isoprostanes** in vascular tissue were highly correlated (r = 0.80). Immunohistochem. studies confirmed that foam cells adjacent to the lipid necrotic core of the plaque were markedly pos. for 8-epi PGF2.alpha.. These cells were also reactive with anti-CD68, an epitope specific for human monocyte/macrophages. 8-Epi PGF2.alpha. immunoreactivity was also detected in cells pos. for anti-.alpha.-smooth muscle actin antibody, which specifically recognizes vascular smooth muscle cells. The authors' results indicate that 8-epi PGF2.alpha. and IPF2.alpha.-I, two distinct

F2-**isoprostanes** and markers of oxidative stress in vivo, are present in human atherosclerotic plaque. Quantitation of these chem. stable products of lipid peroxidn. in target tissues, as well as in biol. fluids, may aid in the rational development of antioxidant drugs in humans.

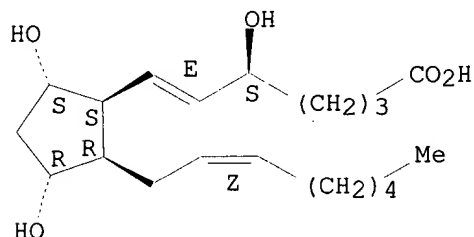
- ST F2 **isoprostane** atherosclerotic lesion
IT Prostaglandins
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(F2-**isoprostanes**; distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT Arterial diseases
(carotid, atherosclerotic lesion; distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT Carotid artery
(disease, atherosclerotic lesion; distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT Foam cell
Macrophage
Vascular smooth muscle
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT Lipid peroxidation
Oxidative stress (biological)
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions in relation to)
- IT Reactive oxygen species
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions in relation to)
- IT Atherosclerosis
(lesion; distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT 27415-26-5, 8 epi PGF2.alpha. 180469-63-0, IPF2.alpha.-I
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- IT 7782-44-7D, Oxygen, reactive species
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions in relation to)
- IT 506-32-1, Arachidonic acid
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(peroxidn. of lipid; distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions in relation to)
- IT 27415-26-5, 8 epi PGF2.alpha. 180469-63-0, IPF2.alpha.-I
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(distinct F2-**isoprostanes** in monocyte/macrophage-derived foam cells and vascular smooth muscle cells in human atherosclerotic lesions)
- RN 27415-26-5 HCAPLUS
CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-, (5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



RN 180469-63-0 HCAPLUS
CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



IT **7782-44-7D**, Oxygen, reactive species
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(distinct F2-isoprostanes in monocyte/macrophage-derived foam
cells and vascular smooth muscle cells in human atherosclerotic lesions
in relation to)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O=O

L64 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:413628 HCAPLUS
DN 127:147669
TI **Markers** of platelet activation and oxidant stress in
atherothrombotic disease
AU **FitzGerald, Garret A.**; Tigges, Jessica; Barry, Patricia; Lawson,
John A.
CS Center Experimental Therapeutics, University Pennsylvania, Philadelphia,
PA, USA
SO Thromb. Haemostasis (1997), 78(1), 280-284
CODEN: THHADQ; ISSN: 0340-6245
PB Schattauer
DT Journal; General Review
LA English
CC 14-0 (Mammalian Pathological Biochemistry)
AB A review is given with 68 refs. including the authors own work. Several
new approaches to the study of platelet activation were developed.
Logically, these should be combined with novel indexes of coagulant
function to select rational targets for antithrombotic drugs. They may
also be invaluable in dose-finding, which was a particular weakness in
this area of drug development. While activation of platelets and the

coagulation cascade are virtually simultaneous events, markers of the atherosclerosis are also artificially segregated from those of, the complicating thrombotic process. Oxidant stress was implicated in both platelet activation and atherogenesis, yet the ability to study this system was so constrained that appropriate doses of antioxidant vitamins are unsure. Novel approaches to this problem promise the ability to study oxidative modification of proteins, lipids, and DNA in clin. studies.

ST **review** platelet **isoprostan** oxidative stress
atherothrombosis
IT Oxidative stress (biological)
Platelet activation
Thrombosis
(markers of platelet activation and oxidant stress in atherothrombosis)
IT Prostaglandins
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU
(Occurrence)
(markers of platelet activation and oxidant stress in atherothrombosis)

L64 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:409641 HCAPLUS

DN 127:93385

TI Novel **indices** of oxidant stress in cardiovascular disease:
specific analysis of F2-**isoprostanes**

AU **Pratico, Domenico**; Reilly, Murdeach; Lawson, John A.;
FitzGerald, Garret A.

CS 905 Stellar Chance Laboratories, University of Pennsylvania, Philadelphia,
PA, 19104, USA

SO Agents Actions Suppl. (1997), 48(Prostaglandins and Control of
Vascular Smooth Muscle Cell Proliferation), 25-41
CODEN: AASUDJ; ISSN: 0379-0363

PB Birkhaeuser

DT Journal; General Review

LA English

CC 14-0 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 9

AB A review with 61 refs. The development of methods to measure specific
isoprostanes affords a unique opportunity to investigate both the
role of oxidant stress as a mechanism of disease in vivo and to select
rational doses of putative antioxidant drugs and vitamins for evaluation
in human disease. The ability to measure these compds. directly in situ
at the site of their formation, to immunolocalize them to target cells in
atherosclerotic plaque and other tissues and to assess their biosynthesis
non-invasively in urine promises to elucidate the role of lipid peroxidn.
in cardiovascular disease.

ST **review isoprostane** oxidant stress cardiovascular
disease

IT Prostaglandins
RL: ANT (Analyte); BOC (Biological occurrence); ANST (Analytical study);
BIOL (Biological study); OCCU (Occurrence)
(F2-**isoprostanes**; indexes of oxidant stress in human
cardiovascular disease and specific anal. of F2-**isoprostanes**
in relation to lipid peroxidn.)

IT Cardiovascular diseases
Lipid peroxidation
Oxidative stress (biological)
(indexes of oxidant stress in human cardiovascular disease and specific
anal. of F2-**isoprostanes** in relation to lipid peroxidn.)

L64 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:398825 HCAPLUS

DN 127:76426

TI 8-Epi PGF2.alpha. generation during coronary reperfusion: a potential
quantitative marker of oxidant stress in vivo

AU Delanty, N.; Reilly, M.P.; **Pratico, D.**; Lawson, J.A.; McCarthy,
J.F.; Wood, A.E.; Ohnishi, S.T.; Fitzgerald, D.J.; **Fitzgerald,**
G.A.

CS Center for Experimental Therapeutics, University of Pennsylvania,
Philadelphia, PA, 19104, USA

SO Circulation (1997), 95(11), 2492-2499
CODEN: CIRCAZ; ISSN: 0009-7322

PB American Heart Association

DT Journal

LA English

CC 2-8 (Mammalian Hormones)
Section cross-reference(s): 14

AB Myocardial reperfusion is believed to be assocd. with free radical injury. However, indexes of oxidative stress in vivo have been limited by their poor specificity and sensitivity. **Isoprostanes** are stable products of arachidonic acid formed in a nonenzymic, free radical-catalyzed manner. We have developed a sensitive and specific assay for one of these compds., 8-epi prostaglandin (PG) F2.alpha.. To address its utility as an index of oxidative stress during coronary reperfusion, we measured urinary levels by gas chromatog./mass spectrometry in a canine model of coronary thrombolysis, in patients with acute myocardial infarction treated with thrombolytic therapy, and in patients after elective coronary artery bypass surgery. Urinary 8-epi PGF2.alpha. was unchanged after circumflex artery occlusion in a canine model of coronary thrombolysis (437.2+-.56.4 vs. 432.7+-.55.2 pmol/mmol creatinine) but increased significantly immediately after reperfusion (553.8+-.64.7 pmol/mmol). Urinary levels were increased in patients with acute myocardial infarction given lytic therapy (265.8+-.40.8 pmol/mmol) compared with age-matched control subjects (91.5+-.11.8 pmol/mmol) and patients with stable coronary disease (95.7+-.6.3 pmol/mmol). Preoperative levels rose from 113.2+-.11.8 to 248.2+-.86.3 pmol/mmol at 30 min into revascularization to 332.2+-.82.6 pmol/mmol by 15 min after global myocardial reperfusion (P.05) and dropped to 181.2+-.50.4 pmol/mmol at 30 min and 120.2+-.9.9 pmol/mmol at 24 h after bypass surgery. Corresponding changes in spin adduct formation, found with ESR, were noted in 2 patients. These data support the hypothesis that free radical generation occurs during myocardial reperfusion. Measurement of **isoprostane** prodn. may serve as a noninvasive index of oxidative stress.

ST epiPGF2 coronary reperfusion oxidant stress; **isoprostane** free radical reperfusion injury heart

IT Heart Surgery
(aortocoronary bypass surgery; epiPGF2.alpha. generation during coronary reperfusion as marker of oxidant stress)

IT Fibrinolysis
Myocardial infarction
Oxidative stress (biological)
Reperfusion injury
Urine
(epiPGF2.alpha. generation during coronary reperfusion as marker of oxidant stress)

IT Reactive oxygen species
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(epiPGF2.alpha. generation during coronary reperfusion as marker of oxidant stress)

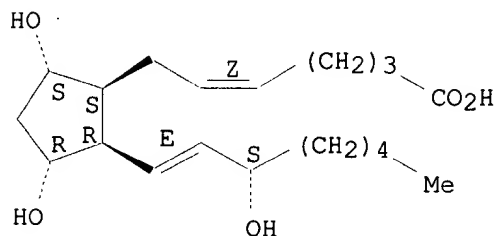
IT **27415-26-5**
RL: BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(epiPGF2.alpha. generation during coronary reperfusion as marker of oxidant stress)

IT **27415-26-5**
RL: BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(epiPGF2.alpha. generation during coronary reperfusion as marker of oxidant stress)

RN 27415-26-5 HCAPLUS

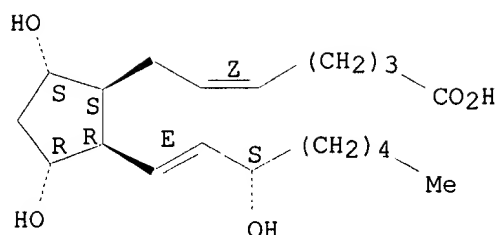
CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



- L64 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1997:365560 HCAPLUS
 DN 127:79348
 TI Urinary 8-Epi PGF2.alpha.: an **index** of oxidant stress in vivo
 AU Reilly, M. P.; Barry, P.; Lawson, J. A.; **Fitzgerald, G.**
 CS The Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia, PA, 19104, USA
 SO Fibrinolysis Proteolysis (1997), 11(Suppl. 1, Third International Fibrinogen Symposium: Hemostasis, Inflammation and Cardiovascular Disease, 1996), 81-84
 CODEN: FBPRFP
 PB Churchill Livingstone
 DT Journal; General Review
 LA English
 CC 14-0 (Mammalian Pathological Biochemistry)
 AB A review, with 20 refs. Isoeicosanoids are free radical catalyzed products of arachidonic acid. To explore their biol. and potential utility as indexes of oxidant stress, the authors have focused upon one isomer, 8-epi PGF2.alpha.. Excretion of this compd. is increased in syndromes putatively assocd. with oxidant stress, including poisoning with paraquat and paracetamol, cigarette smoking, alc. intake, diabetic ketosis, ARDS, and syndromes of vascular reperfusion. 8-Epi may also be formed by cyclooxygenase (COX)-1 in platelets and by COX-2 in monocytes, although these pathways are minor contributors to overall biosynthesis. Monocytes also retain the capacity to form 8-epi as an **isoprostane** when stimulated with zymosan in the presence of LDL. Identification of 8-epi in human plaque and elevated excretion in hypercholesterolemia suggest its utility in exploring the role of oxidant stress in atherosclerosis. 8-Epi may also amplify the affects of platelet agonists in the local microenvironment in syndromes where platelet activation and oxidant injury coincide.
 ST **review** PGF2alpha deriv urine oxidant stress
 IT Atherosclerosis
 Oxidative stress (biological)
 Urine
 (urinary epi-PGF2.alpha. as index of oxidant stress in vivo)
 IT **27415-26-5**, 8-Epi-PGF2.alpha.
 RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (urinary epi-PGF2.alpha. as index of oxidant stress in vivo)
 IT **27415-26-5**, 8-Epi-PGF2.alpha.
 RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (urinary epi-PGF2.alpha. as index of oxidant stress in vivo)
 RN 27415-26-5 HCAPLUS
 CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-, (5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.

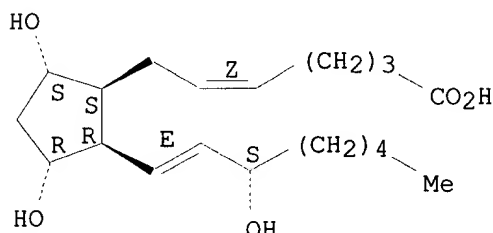


- L64 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1997:337821 HCAPLUS
 DN 127:29140
 TI **Isoprostanes** and antioxidant therapy in human diseases
 AU Meagher, Emma A.; **Fitzgerald, Garret A.**
 CS The University of Pennsylvania, Philadelphia, PA, USA
 SO Fundam. Clin. Cardiol. (1997), 29(Endothelium in Clinical Practice), 413-438
 CODEN: FCCAEH; ISSN: 1067-5264
 PB Dekker
 DT Journal; General Review
 LA English
 CC 2-0 (Mammalian Hormones)
 Section cross-reference(s): 1
 AB A review, with 117 refs., which discusses: assessment of oxidant stress; antioxidant drugs; and antioxidant drugs and clin. trials.
 ST **review isoprostane** antioxidant disease
 IT Antioxidants (pharmaceutical)
 Diseases (animal)
 (isoprostanes and antioxidant therapy in human diseases)
 IT Prostaglandins
 RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (isoprostanes and antioxidant therapy in human diseases)
- L64 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1996:473623 HCAPLUS
 DN 125:158765
 TI 8-Epi PGF2.alpha.: **Specific analysis** of an isoeicosanoid as an **index** of oxidant stress in vivo
 AU Delanty, N.; Reilly, M.; **Pratico, D.**; Fitzgerald, D. J.; Lawson, J. A.; **Fitzgerald, G. A.**
 CS Center Experimental Therapeutics, University Pennsylvania, Philadelphia, PA, 19104, USA
 SO Br. J. Clin. Pharmacol. (1996), 42(1), 15-19
 CODEN: BCPHBM; ISSN: 0306-5251
 DT Journal
 LA English
 CC 2-1 (Mammalian Hormones)
 AB Excessive free radical generation is thought to contribute to tissue injury in a broad spectrum of diseases. A particular constraint in addressing this hypothesis has been the inability to assess free radical generation in vivo and the lack of information on drugs or vitamins which act as effective antioxidants in vivo. Traditional approaches have relied upon measures of substrate oxidizability or spin trapping of free radical adducts ex vivo. It is unknown how these measurements might relate, in a quant. fashion, to the generation of reactive oxygen species in vivo. Isoeicosanoids are free radical catalyzed products of arachidonic acid. One of these compds., 8-epiprostaglandin F2.alpha. (8-epi PGF2.alpha.) exhibits biol. activity and may function as an autacoid. Specific anal. of this 8-epi PGF2.alpha. isomer indicates that it is elevated in certain syndromes thought to be assocd. with oxidant stress. These include vascular reperfusion, paracetamol poisoning and liver cirrhosis.

Apparently healthy individuals who smoke cigarettes or consume alc. exhibit dose dependent increments in excretion of 8-epi PGF2.alpha.. Excretion is depressed by antioxidant vitamins, although not by the nonspecific cyclooxygenase (COX) inhibitor, aspirin, even though 8-epi PGF2.alpha. may be formed by either COX-1 or COX-2. Specific anal. of this and other isoeicosanoids may afford an opportunity to evaluate the effects of antioxidant interventions in human diseases characterized by excessive lipid peroxidn. in vivo.

ST epi PGF2 urine oxidant stress index
 IT Cirrhosis
 Oxidative stress, biological
 Tobacco smoke and smoking
 Urine analysis
 (epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 IT Radicals, biological studies
 Reactive oxygen species
 RL: ANT (Analyte); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative)
 (epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 IT Perfusion
 (re-, epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 IT 64-17-5, Ethanol, biological studies 103-90-2, Paracetamol 4685-14-7, Paraquat
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
 (epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 IT 27415-26-5, 8-Epi-PGF2.alpha.
 RL: MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
 (epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 IT 27415-26-5, 8-Epi-PGF2.alpha.
 RL: MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
 (epi-PGF2.alpha. detn. in urine as index of oxidant stress in vivo)
 RN 27415-26-5 HCAPLUS
 CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
 (5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
 Double bond geometry as shown.

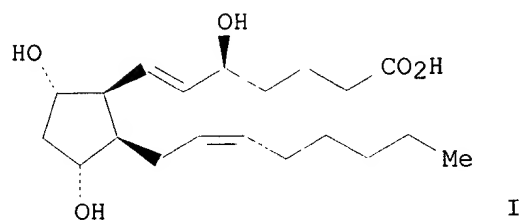


L64 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2002 ACS
 AN 1996:436542 HCAPLUS
 DN 125:167609
 TI Total synthesis of a novel **isoprostane** IPF2.alpha.-I and its
identification in biological fluids
 AU Adiyaman, Mustafa; Lawson, John A.; Hwang, Seong-Woo; Khanapure, Subhash
 P.; **FitzGerald, Garret A.; Rokach, Joshua**
 CS Claude Pepper Inst., Florida Inst. Technol., Melbourne, FL, 32901, USA
 SO Tetrahedron Lett. (1996), 37(28), 4849-4852
 CODEN: TELEAY; ISSN: 0040-4039
 DT Journal
 LA English
 CC 26-3 (Biomolecules and Their Synthetic Analogs)

Section cross-reference(s): 33

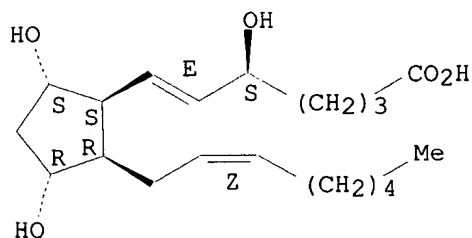
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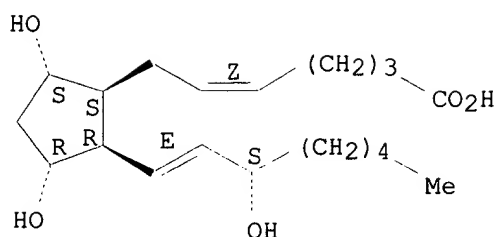
- AB The first total synthesis of IPF2.alpha.-I (I) is described using D-glucose as starting material. This novel **isoprostane** has been used to establish its presence in human urine.
- ST glucose conversion IPF2alphaI; prostane IPF2alphaI prepn occurrence biol fluids
- IT Asymmetric synthesis and induction
(total synthesis of novel **isoprostane** IPF2.alpha.-I and its identification in biol. fluids)
- IT **180469-63-0P**
RL: BOC (Biological occurrence); SPN (Synthetic preparation); BIOL (Biological study); **OCCU (Occurrence)**; PREP (Preparation)
(total synthesis of novel **isoprostane** IPF2.alpha.-I and its identification in biol. fluids)
- IT 50-99-7, D-Glucose, reactions 582-52-5, 1,2:5,6-Di-O-isopropylidene-.alpha.-D-glucofuranose 1501-26-4, Methyl 5-chloro-5-oxopentanoate 2605-67-6, Methyl (triphenylphosphoranylidene)acetate 4762-26-9, Hexyltriphenylphosphonium bromide 16667-96-2
RL: RCT (Reactant)
(total synthesis of novel **isoprostane** IPF2.alpha.-I and its identification in biol. fluids)
- IT 4494-96-6P 4613-62-1P 76700-85-1P 104227-38-5P 155518-70-0P
159812-84-7P 180300-29-2P 180300-30-5P 180300-31-6P 180300-32-7P
180300-33-8P 180300-34-9P 180300-35-0P 180300-36-1P 180469-61-8P
180469-62-9P 180469-64-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(total synthesis of novel **isoprostane** IPF2.alpha.-I and its identification in biol. fluids)
- IT **180469-63-0P**
RL: BOC (Biological occurrence); SPN (Synthetic preparation); BIOL (Biological study); **OCCU (Occurrence)**; PREP (Preparation)
(total synthesis of novel **isoprostane** IPF2.alpha.-I and its identification in biol. fluids)
- RN 180469-63-0 HCAPLUS
- CN Prosta-6,14-dien-1-oic acid, 5,9,11-trihydroxy-,
(5S,6E,8.beta.,9.alpha.,11.alpha.,14Z)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).
Double bond geometry as shown.



L64 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2002 ACS
AN 1995:886471 HCAPLUS
DN 123:276205
TI Immunological characterization of urinary 8-epi-prostaglandin F2.alpha.
excretion in man
AU Wang, Zhaoyue; Ciabattone, Giovanni; Creminon, Christophe; Lawson, John;
Fitzgerald, Garret A.; Patrono, Carlo; Maclof, Jacques
CS U348 INSERM, I.F.R. Vaisseaux-Lariboisiere Hopital Lariboisiere, Paris,
75475, Fr.
SO J. Pharmacol. Exp. Ther. (1995), 275(1), 94-100
CODEN: JPETAB; ISSN: 0022-3565
DT Journal
LA English
CC 2-1 (Mammalian Hormones)
AB **F2-isoprostanes** are prostaglandin (PG) F2-like compds. that are
formed in vivo directly by free radical-catalyzed lipid peroxidn. One of
the compds. that can be produced in abundance by such mechanism is
8-epi-PGF2.alpha., a potent vasoconstrictor. We have developed an enzyme
immunoassay and a RIA for measuring urinary concns. of 8-epi-PGF2.alpha.
by raising antibodies against this compd. The antisera presented high
titers (>1/300,000) and provided highly sensitive assays (IC50, 8 and 24
pg/mL, for EIA and RIA, resp.); cross-reactivity with other PG was
negligible. The interassay reproducibility of EIA was assessed by
measuring the same urine stored frozen in aliquots after solid phase extn.
and thin-layer chromatog. (17%). Measurements of urinary
8-epi-PGF2.alpha. by immunoassays were validated using different antisera
and by comparison with gas chromatog./mass spectrometry. Healthy
volunteers excreted 25 ng of 8-epi-PGF2.alpha./mmol creatinine, with no
circadian variation over three consecutive 8-h collection periods;
preliminary results showed that excretion increased as a function of age.
Urinary excretion of 8-epi-PGF2.alpha. was unchanged by treatment with two
nonsteroidal antiinflammatory drugs, ibuprofen at 1.2 g/day for 4 days or
aspirin as a single administration of 1 g. In contrast, the urinary
excretion of 11-dehydro-thromboxane B2, a platelet cyclooxygenase-derived
metabolite, was reduced by more than 80% after aspirin administration.
Anal. of serum revealed a small (0.1% of thromboxane B2) but consistent
prodn. of 8-epi-PGF2.alpha. by a cyclooxygenase-dependent mechanism
totally suppressed after administration of aspirin to the same subjects.
Monitoring of this compd. in urine or plasma may turn to be a useful index
of in vivo lipid peroxidn.
ST urine epirostaglandin F2 immunoassay
IT Urine
(age-dependent urinary excretion of epirostaglandin F2.alpha. in man)
IT Senescence
Urine analysis
(epirostaglandin F2.alpha. detn. in urine of man by immunoassay and
effect on age)
IT **27415-26-5**, 8-epi-Prostaglandin F2.alpha.
RL: **ANT (Analyte)**; BPR (Biological process); **ANST**
(**Analytical study**); BIOL (Biological study); PROC (Process)
(epirostaglandin F2.alpha. detn. in urine of man by immunoassay and
effect on age)
IT **27415-26-5**, 8-epi-Prostaglandin F2.alpha.
RL: **ANT (Analyte)**; BPR (Biological process); **ANST**
(**Analytical study**); BIOL (Biological study); PROC (Process)
(epirostaglandin F2.alpha. detn. in urine of man by immunoassay and
effect on age)
RN 27415-26-5 HCAPLUS
CN Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-,
(5Z,8.beta.,9.alpha.,11.alpha.,13E,15S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).
Double bond geometry as shown.



=> fil biosis

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L82 ANSWER 1 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1999:523317 BIOSIS
DN PREV199900523317
TI A newly-discovered **isoprostane** is a marker of oxidative stress
in LPS-mediated inflammation in humans.
AU Mardini, Issam A. (1); Lawson, John A. (1); **Rokach, Joshua A.**;
Adiyaman, Mustafa; Hwang, Seong-Woo; Khanapure, Subhash P.; Schumacher,
Kathlyn J. (1); **Fitzgerald, Garret A. (1)**
CS (1) Univ. Pennsylvania, Philadelphia, PA USA
SO Circulation, (Oct. 27, 1998) Vol. 98, No. 17 SUPPL., pp. I7.
Meeting Info.: **71st Scientific Sessions of the American Heart**
Association Dallas, Texas, USA November 8-11, 1998 The American Heart
Association
. ISSN: 0009-7322.
DT **Conference**
LA English
CC Cardiovascular System - General; Methods *14501
Biophysics - General Biophysical Techniques *10504
Pathology, General and Miscellaneous - Inflammation and Inflammatory
Disease *12508
General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals *00520
Biochemical Studies - General *10060
IT Major Concepts
Cardiovascular System (Transport and Circulation)
IT Chemicals & Biochemicals
F-2-**isoprostane**: newly discovered, oxidative stress marker
IT Methods & Equipment
GC/MS: analytical method
IT Miscellaneous Descriptors
inflammation: LPS-mediated; oxidative stress; **Meeting**
Abstract

L82 ANSWER 2 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1998:17496 BIOSIS
DN PREV199800017496
TI Urinary extension of IPF2alpha-1 and 8-epi PGF2alpha: Specific analysis of

distinct F2 **isoprostanes** as noninvasive indices of oxidant stress in vivo.

AU **Pratico, Domenico (1)**; Barry, Orla P. (1); Lawson, John A. (1); **Rokach, Joshua; Fitzgerald, Garret A.**

CS (1) Univ. Pa., Philadelphia, PA USA

SO Circulation, (10/21/97, 1997) Vol. 96, No. 8 SUPPL., pp. I417.
Meeting Info.: **70th Scientific Sessions of the American Heart Association** Orlando, Florida, USA November 9-12, 1997
ISSN: 0009-7322.

DT **Conference**

LA English

CC Metabolism - Lipids *13006
Biophysics - Bioenergetics: Electron Transport and Oxidative Phosphorylation *10510
Physiology, General and Miscellaneous - Stress *12008
Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System *15008
Immunology and Immunochemistry - Immunopathology, Tissue Immunology *34508
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520

BC Hominidae 86215

IT Major Concepts
Immune System (Chemical Coordination and Homeostasis)

IT Parts, Structures, & Systems of Organisms
monocyte: blood and lymphatics, immune system

IT Chemicals & Biochemicals
arachidonic acid; prostaglandin F-2 **isoprostane**: oxidant stress indicator; prostaglandin F-2-alpha: urinary excretion; thromboxane B-2; 8-epi-prostaglandin F-2-alpha: urinary excretion

IT Miscellaneous Descriptors
oxidant stress; **Meeting Abstract**

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae)

ORGN Organism Superterms
Animals; Chordates; Humans; Mammals; Primates; Vertebrates

RN 551-11-1 (PROSTAGLANDIN F-2-ALPHA)
54397-85-2 (THROMBOXANE B-2)
506-32-1 (ARACHIDONIC ACID)

L82 ANSWER 3 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.

AN 1997:241470 BIOSIS

DN PREV199799540673

TI Brain **isoprostane** levels are elevated in Alzheimer's disease.

AU **Pratico, Domenico**; Lee, Virginia M.-Y.; **Trojanowski, John Q.; Fitzgerald, Garret A.**

CS Cent. Exp. Therapeutics, Univ. Pa. Sch. Med., Philadelphia, PA USA

SO Journal of Investigative Medicine, (1997) Vol. 45, No. 3, pp. 238A.
Meeting Info.: **Annual Meeting of the Association of American Physicians, the American Society for Clinical Investigation, and the American Federation for Medical Research: Biomedicine '97 Medical Research from Bench to Bedside** Washington, D.C., USA April 25-27, 1997
ISSN: 1081-5589.

DT **Conference; Abstract; Conference**

LA English

CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Biochemistry - Gases *10012
Biochemical Studies - Sterols and Steroids 10067
Endocrine System - General *17002
Nervous System - Pathology *20506

BC Hominidae *86215

IT Major Concepts
Biochemistry and Molecular Biophysics; Endocrine System (Chemical

Coordination and Homeostasis); Neurology (Human Medicine, Medical Sciences)

IT Chemicals & Biochemicals
OXYGEN FREE RADICALS

IT Miscellaneous Descriptors
BRAIN; ENDOCRINE SYSTEM; **ISOPROSTANE F-2ALPHA**; NERVOUS SYSTEM; OXIDATIVE STRESS; OXYGEN FREE RADICALS; PATIENT; 8-EPI-PROSTAGLANDIN-F-2ALPHA

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae)

ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates

RN 11062-77-4 (OXYGEN FREE RADICALS)

L82 ANSWER 4 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1997:241302 BIOSIS
DN PREV199799540505
TI **Isoprostane biosynthesis: Close correlation of two distinct F2 isoprostanes in syndromes of oxidant stress.**
AU Reilly, Muredach P.; **Pratico, Domenico**; Rokach, Joseph; Lawson, John; **Fitzgerald, Garret A.**
CS Univ. Pa., Philadelphia, PA USA
SO Journal of Investigative Medicine, (1997) Vol. 45, No. 3, pp. 210A.
Meeting Info.: **Annual Meeting of the Association of American Physicians, the American Society for Clinical Investigation, and the American Federation for Medical Research: Biomedicine '97 Medical Research from Bench to Bedside** Washington, D.C., USA April 25-27, 1997
ISSN: 1081-5589.
DT **Conference; Abstract; Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Clinical Biochemistry; General Methods and Applications *10006
Biophysics - Molecular Properties and Macromolecules *10506
Metabolism - Lipids *13006
Metabolism - Sterols and Steroids *13008
Metabolism - Metabolic Disorders *13020
Endocrine System - General *17002
Toxicology - General; Methods and Experimental *22501
Developmental Biology - Embryology - Pathological *25503

IT Major Concepts
Biochemistry and Molecular Biophysics; Clinical Chemistry (Allied Medical Sciences); Development; Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Toxicology

IT Chemicals & Biochemicals
PROSTAGLANDIN F2-ALPHA

IT Miscellaneous Descriptors
ACUTE MYOCARDIAL INFARCTION; CARDIOVASCULAR MEDICINE; CIGARETTE SMOKING; CLINICAL CHEMISTRY; FAMILIAL HOMOZYGOUS HYPERCHOLESTEROLEMIA; F2 **ISOPROSTANES**; GENETIC DISEASE; HEART DISEASE; METABOLIC DISEASE; OXIDANT STRESS; VASCULAR DISEASE; 8-EPI PROSTAGLANDIN F2-ALPHA

RN 551-11-1 (PROSTAGLANDIN F2-ALPHA)

L82 ANSWER 5 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1997:3661 BIOSIS
DN PREV199799302864
TI Monocytes in human atherosclerotic plaque contain high levels of 8-epi PGF-2alpha: An index of oxidative stress in vivo.
AU **Pratico, Domenico (1)**; Iuliano, Luigi; Spagnoli, Luigi; Mauriello, A.; MacLouf, Jacques; Violi, Francesco; **Fitzgerald, Garrett A.**
CS (1) Univ. Pennsylvania, Philadelphia, PA USA
SO Circulation, (1996) Vol. 94, No. 8 SUPPL., pp. I277.
Meeting Info.: **69th Scientific Sessions of the American Heart**

Association New Orleans, Louisiana, USA November 10-13, 1996
ISSN: 0009-7322.

DT **Conference; Abstract**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Biochemical Studies - General *10060
Pathology, General and Miscellaneous - General *12502
Metabolism - General Metabolism; Metabolic Pathways *13002
Cardiovascular System - General; Methods *14501
IT Major Concepts
Biochemistry and Molecular Biophysics; Cardiovascular System (Transport and Circulation); Metabolism; Pathology
IT Chemicals & Biochemicals
PROSTAGLANDIN F-2 ALPHA
IT Miscellaneous Descriptors
ATHEROSCLEROSIS; BLOOD AND LYMPHATICS; CARDIOVASCULAR SYSTEM; ISOPROSTANE; LIPID PEROXIDATION; MONOCYTE; OXIDATIVE STRESS; OXIDATIVE STRESS INDEX; VASCULAR DISEASE; 8-EPI PGF-2 ALPHA; 8-EPI PROSTAGLANDIN F-2 ALPHA
RN 551-11-1 (PROSTAGLANDIN F-2 ALPHA)

L82 ANSWER 6 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1997:3305 BIOSIS
DN PREV199799302508
TI Elevated urinary 8-epi-PGF2-alpha, an in vivo index of oxidant stress in pregnancy-induced hypertension.
AU Robinson, Charlah A.; Lawson, John; Morgan, Mark A.; **Fitzgerald, Garret A.**
CS Univ. Pennsylvania Med. Center, Philadelphia, PA USA
SO Circulation, (1996) Vol. 94, No. 8 SUPPL., pp. I215-I216.
Meeting Info.: **69th Scientific Sessions of the American Heart Association** New Orleans, Louisiana, USA November 10-13, 1996
ISSN: 0009-7322.
DT **Conference; Abstract**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Physiology, General and Miscellaneous - Stress *12008
Metabolism - General Metabolism; Metabolic Pathways *13002
Metabolism - Lipids *13006
Cardiovascular System - Blood Vessel Pathology *14508
Reproductive System - Pathology *16506
Endocrine System - General *17002
BC Hominidae *86215
IT Major Concepts
Cardiovascular Medicine (Human Medicine, Medical Sciences); Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Physiology; Reproductive System (Reproduction)
IT Chemicals & Biochemicals
PROSTAGLANDIN F2-ALPHA
IT Miscellaneous Descriptors
CARDIOVASCULAR MEDICINE; ENDOCRINE SYSTEM; FEMALE; F2-ISOPROSTANE; HEMODYNAMICS; OBSTETRICS; OXIDANT STRESS; PATIENT; PREECLAMPSIA; PREGNANCY-INDUCED HYPERTENSION; PROSTAGLANDIN F2-ALPHA; REPRODUCTIVE SYSTEM DISEASE/FEMALE; VASCULAR DISEASE
ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
human (Hominidae)
ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates
RN 551-11-1 (PROSTAGLANDIN F2-ALPHA)

L82 ANSWER 7 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:449047 BIOSIS

DN PREV199699171403
TI Total synthesis of IPF-2alpha-I: A major urinary **isoprostane**.
AU Adiyaman, M. (1); Lawson, J. A.; Hwang, S. W. (1); Khanapure, S. P. (1);
Fitzgerald, G. A.; Rokach, J. (1)
CS (1) Claude Pepper Inst., Dep. Chem., Florida Inst. of Technol., 150 W.
University Blvd., Melbourne, FL 32901 USA
SO Abstracts of Papers American Chemical Society, (1996) Vol. 212, No. 1-2,
pp. ORGN 66.
Meeting Info.: **212th American Chemical Society National Meeting**
Orlando, Florida, USA August 25-29, 1996
ISSN: 0065-7727.
DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of**
Conferences, Congresses, Review Annuals 00520
Biochemical Methods - General *10050
Biochemical Methods - Lipids *10056
Biochemical Studies - General *10060
Biochemical Studies - Lipids *10066
Biophysics - Molecular Properties and Macromolecules *10506
Urinary System and External Secretions - Physiology and Biochemistry
*15504
IT Major Concepts
Biochemistry and Molecular Biophysics; Methods and Techniques; Urinary
System (Chemical Coordination and Homeostasis)
IT Chemicals & Biochemicals
IPF-2ALPHA-I
IT Miscellaneous Descriptors
MEETING ABSTRACT; NATURAL PRODUCT; SYNTHETIC METHOD
RN **180469-63-0 (IPF-2ALPHA-I)**

L82 ANSWER 8 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:308268 BIOSIS
DN PREV199699030624
TI **Isoprostanes**-indices of oxidant stress.
AU **Fitzgerald, G. A.**
CS Univ. Pa. Sch. Med., Philadelphia, PA 19104 USA
SO FASEB Journal, (1996) Vol. 10, No. 6, pp. A1138.
Meeting Info.: **Joint Meeting of the American Society for Biochemistry**
and Molecular Biology, the American Society for Investigative Pathology
and the American Association of Immunologists New Orleans, Louisiana,
USA June 2-6, 1996
ISSN: 0892-6638.
DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of**
Conferences, Congresses, Review Annuals 00520
Cytology and Cytochemistry - Human 02508
Biochemistry - Gases *10012
Biochemical Studies - General 10060
Biochemical Studies - Lipids 10066
Biochemical Studies - Sterols and Steroids 10067
Biochemical Studies - Carbohydrates 10068
Biophysics - Molecular Properties and Macromolecules 10506
Metabolism - Carbohydrates 13004
Metabolism - Sterols and Steroids 13008
Metabolism - Metabolic Disorders *13020
Cardiovascular System - Blood Vessel Pathology *14508
Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004
Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and
Reticuloendothelial System *15008
Respiratory System - Pathology *16006
Endocrine System - General *17002
Endocrine System - Pancreas *17008
Toxicology - General; Methods and Experimental *22501
BC Hominidae *86215

IT Major Concepts
Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport and Circulation); Cardiovascular Medicine (Human Medicine, Medical Sciences); Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Pulmonary Medicine (Human Medicine, Medical Sciences); Toxicology

IT Chemicals & Biochemicals
ARACHIDONIC ACID; PROSTAGLANDIN F2ALPHA; PARAQUAT; PARACETAMOL; ALCOHOL

IT Miscellaneous Descriptors
ADULT RESPIRATORY DISTRESS SYNDROME; ALCOHOL INTAKE; ARACHIDONIC ACID; ATHEROSCLEROSIS; DIABETIC KETOSIS; HYPERCHOLESTEROLEMIA; **MEETING ABSTRACT**; MONOCYTE; PARACETAMOL; PARAQUAT; PLATELET; POISONING; SMOKING; VASCULAR PERFUSION; 8-EPI PROSTAGLANDIN F2ALPHA

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae)

ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates

RN 506-32-1 (ARACHIDONIC ACID)
551-11-1 (PROSTAGLANDIN F2ALPHA)
4685-14-7 (PARAQUAT)
103-90-2 (PARACETAMOL)
64-17-5 (ALCOHOL)

L82 ANSWER 9 OF 9 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1996:11780 BIOSIS
DN PREV199698583915
TI Prostaglandin G/H synthase dependent formation of the **isoprostane**, 8-epi PGF-2-alpha.
AU **Pratico, Domenico; Fitzgerald, Garret A.**
CS Univ. Pa., Philadelphia, PA USA
SO Circulation, (1995) Vol. 92, No. 8 SUPPL., pp. I303.
Meeting Info.: **68th Scientific Session of the American Heart Association** Anaheim, California, USA November 13-16, 1995
ISSN: 0009-7322.

DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Biochemistry - Gases 10012
Biochemical Studies - Lipids 10066
Enzymes - Physiological Studies *10808
Physiology, General and Miscellaneous - Stress 12008
Metabolism - Lipids *13006
Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004
Endocrine System - General *17002

BC Hominidae *86215

IT Major Concepts
Blood and Lymphatics (Transport and Circulation); Endocrine System (Chemical Coordination and Homeostasis); Enzymology (Biochemistry and Molecular Biophysics); Metabolism

IT Chemicals & Biochemicals
PROSTAGLANDIN F2-ALPHA; ARACHIDONIC ACID

IT Miscellaneous Descriptors
ARACHIDONIC ACID; **MEETING ABSTRACT**; METABOLISM; OXIDATIVE STRESS; PLATELET; PROSTAGLANDIN F2-ALPHA

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae)

ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates

RN 551-11-1 (PROSTAGLANDIN F2-ALPHA)
506-32-1 (ARACHIDONIC ACID)

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L90 ANSWER 1 OF 1 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD
AN 2000-412349 [35] WPIX
DNN N2000-308183 DNC C2000-125076
TI Measuring level of lipid peroxidation for diagnosing oxidant stress
syndrome/disease such as Alzheimer's disease, involves comparing level of
isoprostane molecule marker in samples from normal and diseased
mammals.
DC B04 D16 S03
IN **FITZGERALD, G A; PRATICO, D; ROKACH, J;**
TROJANOWSKI, J Q
PA (FLOR-N) FLORIDA INST TECHNOLOGY; (UYPE-N) UNIV PENNSYLVANIA
CYC 23
PI WO 2000032805 A1 20000608 (200035)* EN 58p C12P031-00
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AU CA JP US
AU 2000031083 A 20000619 (200044) C12P031-00
EP 1135519 A1 20010926 (200157) EN C12P031-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
ADT WO 2000032805 A1 WO 1999-US28583 19991202; AU 2000031083 A AU 2000-31083
19991202; EP 1135519 A1 EP 1999-965096 19991202, WO 1999-US28583 19991202
FDT AU 2000031083 A Based on WO 200032805; EP 1135519 A1 Based on WO 200032805
PRAI US 1998-110569P 19981202
IC ICM C12P031-00
ICS C12Q001-26; G01N033-53
AB WO 200032805 A UPAB: 20000725
NOVELTY - Measuring level of lipid peroxidation in a mammal suspected of
having an oxidant stress syndrome/disease (OS) involves comparing the
level of **isoprostane** molecule marker (I) in samples (Ia) and
(Ib) obtained from diseased and normal mammals respectively. An elevated
level of (I) in (Ia) relative to the level in (Ib), indicates the presence
of OS.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
following:
(1) identifying a compound (II) useful for the treatment of
Alzheimer's disease (AD), involving comparing the level of (I) prior to
and after administration of (II) in a mammal, where (II) which reduces the
level of (I), is identified as the compound useful for treatment of AD;
(2) determining the optimal concentration or dosage frequency of (II)
involving monitoring the level of (I) in a series of mammals administered
with (II), at a series of concentration or dosage frequencies not toxic to
the mammal, which results in maximal reduction of the level of (I), is the
optimal concentration or optimal dosage frequency; and

(3) a kit for measuring level of (I) comprising:
 (i) sample container for carrying a tissue or body fluid sample;
 (ii) a solution for extraction of (I);
 (iii) a negative and positive control solution of (I) obtained from a normal mammal and a mammal afflicted with Alzheimer's disease respectively;

(iv) an antibody directed against (I); and
 (v) instructional material.

ACTIVITY - Nootropic; neuroprotective.

MECHANISM OF ACTION - None given.

USE - The method is useful for diagnosing oxidant stress syndrome or disease in a mammal involving measuring level of lipid peroxidation, and for identifying a compound and its effective dose, useful for treating Alzheimer's disease (claimed). The oxidative stress syndrome or disease is a neurodegenerative syndrome or disease such as, for example, Alzheimer's disease, Amyotrophic Lateral Sclerosis, Down's syndrome, and Parkinson's disease (preferably Alzheimer's disease).

ADVANTAGE - The **isoprostanes** used as molecular markers of lipid peroxidation are chemically stable end products of lipid peroxidation, that are released by phospholipases circulated in the plasma and are excreted in the urine, when compared to the conventional indices of lipid peroxidation which rapidly decompose.

Dwg.0/7

FS CPI EPI

FA AB; DCN

MC CPI: B04-G02; B04-H03C; B11-C07A; B11-C08A; B11-C08D2; B12-K04A5;
 B12-K04E; D05-H09

EPI: S03-E14H4

TECH UPTX: 20000725

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: Measuring the level of (I) comprises obtaining (Ia) from the tissue or body fluid of the mammal and isolating (I) by using a total lipid solvent extraction method, followed by assaying and quantifying the level of (I). The assay is especially a gas chromatography/mass spectrometry assay comprising a synthetic homologous **isoprostane** standard, when quantifying is performed using peak area or peak height ratios. The elevated level of lipid peroxidation comprises an elevated level of reactive oxygen species (ROS), and an elevated level of inflammation which comprises an elevated cyclooxygenase (COX) activity. (I) is iPF2alpha-III, iPF2alpha-VI or 8,12-iso-iPF2alpha-VI. (Ia) or (Ib) is obtained from the tissue or body fluid of the mammal. The tissue is brain frontal or temporal pole tissue and the body fluid is cerebrospinal fluid (CSF), plasma or urine. (II) is an antioxidant or antiinflammatory compound which is administered at a series of concentrations effective to inhibit the activity of COX enzyme or reduce the level of ROS in the brain tissue.

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L93 ANSWER 1 OF 2 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1999-253847 [21] WPIX

DNC C1999-074141

TI Use of **isoprostane** measurements for assessing oxidative stress in an organism.

DC B04 D16

IN CALLEWAERT, D M; KIM, H; MORROW, J D; ROBERTS, L J

PA (OXFO-N) OXFORD BIOMEDICAL RES INC; (UYVA-N) UNIV VANDERBILT

CYC 1

PI US 5891622 A 19990406 (199921)* 16p C12Q001-00 <--

ADT US 5891622 A Provisional US 1997-38496P 19970225, US 1998-28543 19980224

PRAI US 1997-38496P 19970225; US 1998-28543 19980224

IC ICM C12Q001-00

ICS C12Q001-02; C12Q001-26

AB US 5891622 A UPAB: 20011211

NOVELTY - Method for assessing oxidative stress in an organism comprising measuring the amount of free, esterified and glucuronidated forms of

isoprostanes (IPs), is new.

DETAILED DESCRIPTION - The method of assessing oxidative stress in vivo comprises measuring the amount of free, esterified and glucuronidated forms of IPs, and comparing the measured amount with a healthy control sample where a relatively increased amount of IPs in the test sample indicates oxidative stress.

An INDEPENDENT CLAIM is also included for a method to assess oxidative stress in vivo by measuring the amount of glucuronidated IPs and comparing the measured amount with a control sample where a relatively increased amount of glucuronidated IPs in the test sample indicates oxidative stress.

USE - The methods can be used for the assessment of oxidative stress and disorders such as hepatorenal syndrome, atherosclerosis and carcinogenesis.

The levels of 8EPGF2 in urine specimens obtained from heavy smokers were measured by ELISA without pretreatment or GC/NICI-MS after purification of urine samples by a 2 column method. The 8EPGF2 levels in smokers urine specimens were 1.5 to 3-fold higher than those of non-smokers as obtained by both ELISA and GC/NICI-MS. The levels of 8EPGF2 measured by ELISA in urine specimens were 4 to 15-fold higher than the levels of these measured by GC/NICI-MS.

DESCRIPTION OF DRAWING(S) - The graph shows retention of 8-epi-prostaglandin F2 alpha (8EPGF2) in an immunoaffinity column.

Dwg.0/7

FS CPI

FA AB; DCN

MC CPI: B04-B04B1; B04-B04D4; B04-B04H; B04-B04L; B04-H03; B04-H03C; B04-L01; B10-C04A; B11-C07A; B11-C08E3; B12-K04A; D05-H09

TECH UPTX: 19990603

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Sample: The biological sample may be plasma, cerebrospinal fluid, bile, joint fluid and especially urine. The measuring step is preferably an immunoassay carried out after hydrolyzation of the sample.

Preferred **Isoprostanes**: The IPs measured is 8-epi-prostaglandin F2alpha (8EPGF2).

L93 ANSWER 2 OF 2 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1994-083360 [10] WPIX

DNN N1994-065081 DNC C1994-038242

TI New **isoprostane**-protein conjugates - used for the prodn. of antibodies and for the measurement of **isoprostanes** in biological samples.

DC B03 B04 B05 D16 S03

IN KAN, W; MAXEY, K M

PA (CAYM-N) CAYMAN CHEM CO

CYC 18

PI WO 9404921 A1 19940303 (199410)* EN 19p G01N033-53 <--

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

W: AU JP

AU 9350099 A 19940315 (199428) G01N033-53 <--

ADT WO 9404921 A1 WO 1993-US7630 19930811; AU 9350099 A AU 1993-50099 19930811

FDT AU 9350099 A Based on WO 9404921

PRAI US 1992-928484 19920811

REP 02Jnl.Ref; EP 166583

IC ICM G01N033-53

ICS C07K017-00; C08H001-00

AB WO 9404921 A UPAB: 19940421

An **isoprostane**-protein conjugate comprising an **isoprostane** covalently bonded to a protein is claimed.

Pref. the **isoprostane** is of formula (I)-(IV). The protein may be e.g. acetylcholinesterase, horseradish peroxidase, alkaline phosphatase, beta-galactosidase, glucose oxidase, urease, glucose-6-dehydrogenase, penicillinase, serum albumins, thyroglobulins or keyhole limpet haemocyanin.

USE - The measurement of **isoprostanes** can be used in the diagnosis of oxidative stress and oxidative tissue damage, including

ischemic tissue re-perfusion injury, oxidant stress from environmental sources such as ozone pollution and oxidative lung injury in the respiratory distress syndromes of prematurity and adult acute pulmonary trauma. It can also be used in prognosis in e.g. victims of myocardial infarction, stroke, closed head injury, asphyxiation or cold water immersion. The conjugates can also be used for the prodn. of antibodies and in studies of **isoprostane** binding proteins and receptors.

Dwg.0/0

FS CPI EPI

FA AB; GI; DCN

MC CPI: B04-G01; B04-H03; B04-L03A; B04-L05A; B04-N01; B04-N04; B11-C07A;

B12-K04; D05-A01A4; D05-A01B; D05-H09; D05-H11

EPI: S03-E14H4

=> fil hcaplus

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FILE COVERS 1907 - 29 Jan 2002 VOL 136 ISS 5

FILE LAST UPDATED: 28 Jan 2002 (20020128/ED)

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This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

HCAplus now provides online access to patents and literature covered in CA from 1907 to the present. Bibliographic information and abstracts were added in 2001 for over 3.8 million records from 1907-1966.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the H/Z/CA/CAplus files between 12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches during this period, either directly appended to a CAS Registry Number or by qualifying an L-number with /P, may have yielded incomplete results. As of 1/23/02, the situation has been resolved. Also, note that searches conducted using the PREP role indicator were not affected.

=> d bib abs hitrn tot

L136 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:185403 HCAPLUS

DN 131:41645

TI Simultaneous HPLC analysis of arachidonic acid metabolites in biological samples with simple solid phase extraction

AU Kim, Hyung-Gun; Huh, Young-Na; Park, Kun-Suk

CS Department of Pharmacology, College of Medicine, Dankook University, Cheonan, 330-714, S. Korea

SO Korean J. Physiol. Pharmacol. (1998), 2(6), 779-786

CODEN: KJPPFS; ISSN: 1226-4512

PB Korean Physiological Society

DT Journal

LA English

AB A reversed-phase high-performance liq. chromatog. (RP-HPLC) has been developed to analyze the metabolites of arachidonic acid based on the specificities of UV absorption of these various metabolites and is sensitive to the nanogram level. This procedure makes it possible to ext. complex mixts. of eicosanoids efficiently with a single step and to analyze them simultaneously by RP-HPLC from biol. samples using octadecylsilyl silica extn. column and PGB2 as an internal std. The **cyclooxygenase** products {prostaglandin (PG)D2, PGE1, PGE2, PGF1.alpha., PGF2.alpha., 6-keto-PGF1.alpha., and thromboxane B2 (TXB2)} and lipid peroxidn. product, **isoprostanes**, of arachidonic acid were monitored by one isocratic HPLC system at 195 nm wavelength. The lipoxygenase products {leukotriene(LT)B4, LTC4, LTD4, and 5-hydroxyeicosatetraenoic acid (5-HETE), 12-HETE, 15-HETE} were measured by another isocratic HPLC system at 280 nm for LTs and 235 nm for HETEs. This method provides a simple and reliable way to ext. and assess quant. the final arachidonic acid metabolites.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L136 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:81638 HCAPLUS

DN 130:136305

TI Lipid hydroperoxides to detect brain injury

IN Beal, M. Flint; Koroshetz, Walter J.

PA The General Hospital Corporation, USA

SO PCT Int. Appl., 45 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9904268	A1	19990128	WO 1998-US14829	19980715 <--
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
AU 9884106	A1	19990210	AU 1998-84106	19980715 <--
PRAI US 1997-52948		19970717	<--	
US 1997-55143		19970812	<--	
WO 1998-US14829		19980715	<--	

AB Disclosed are methods for diagnosing brain injury by detecting an elevated level of lipid hydroperoxide or a degradative product thereof in a body fluid, such as plasma. Elevated lipid hydroperoxide levels also are correlated with the extent and severity of brain injury, as well as patient prognosis and conventional scales for assessing brain injury. Also disclosed are methods for detg. the likelihood that a patient will develop, or has developed, vasospasm. Such methods entail detecting a decrease in ascorbic acid levels in a body fluid of a patient.

IT 27415-26-5, 8-epi-Pgf2.alpha.

RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(lipid hydroperoxides to detect brain injury)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L136 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:45058 HCAPLUS

DN 130:121861
TI Method and compositions to assess oxidative stress in vivo by determining
prostaglandin F2-like compounds and their metabolites
IN Roberts, L. Jackson, II; Morrow, Jason D.
PA Vanderbilt University, USA
SO U.S., 15 pp., Cont.-in-part of U.S. 5,700,654.
CODEN: USXXAM

DT Patent
LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5858696	A	19990112	US 1997-912440	19970818 <--
	US 5700654	A	19971223	US 1994-304147	19940912 <--
PRAI	US 1991-715419		19910614		<--
	US 1994-304147		19940912		<--

AB This invention relates to a method to assess oxidative stress in vivo by quantification of prostaglandin F2-like compds. and their metabolites produced by a noncyclooxygenase free radical-catalyzed mechanism. The major urinary metabolite of 8-iso-prostaglandin F2.alpha. was analyzed by GC-neg. ion chem. ionization-mass spectrometry and by electron ionization-MS.

IT 27415-26-5, 8-Iso-PGF2.alpha.

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metabolic study of; method and compns. to assess oxidative stress in vivo by detg. prostaglandin F2-like compds. and their metabolites)

IT 39391-18-9, Cyclooxygenase

RL: MSC (Miscellaneous)
(prostanoids not derived from, detn. of; method and compns. to assess oxidative stress in vivo by detg. prostaglandin F2-like compds. and their metabolites)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L136 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:706994 HCAPLUS

DN 130:105032

TI Improved blood substitute evaluation of its effects on human endothelial cells

AU Simoni, Jan; Simoni, Grace; Martinez-Zagayilan, Raul; Wesson, Donald E.; Lox, Charles D.; Prien, Samuel D.; Kumar, Ramana Vijay

CS Departments of Surgery, Texas Tech University Health Sciences Center, Lubbock, TX, 79430, USA

SO ASAIO J. (1998), 44(5), M356-M367

CODEN: AJOUET; ISSN: 1058-2916

PB Lippincott-Raven Publishers

DT Journal

LA English

AB The authors have previously documented that appropriate chem. and pharmacol. modification of the Hb mol. are required to attenuate certain pathophysiol. reactions of the reticuloendothelium. The current study further investigates the mol. responses of human coronary artery endothelial cells to a high concn. (0.4 mmol) of 1) unmodified bovine Hb; and 2) an improved blood substitute that comprises Hb cross-linked intramolecularly with o-ATP and intermolecularly with o-adenosine, and conjugated with reduced glutathione. In this study, the scavenging effect of Hbs toward nitric oxide (NO) was evaluated by the measurement of nitrite (NO2-) and nitrate (NO3-) formation. The pro-oxidant effect of Hb on endothelial cells was examd. by the measurement of intracellular reduced glutathione, and by monitoring the formation of lipid hydroperoxides and 8-iso prostaglandin F2.alpha., a novel potent vasoconstrictor, which is produced by a noncyclooxygenase mechanism involving free radical catalyzed peroxidn. of arachidonic acid. The inflammatory reactions of endothelial cells were evaluated by the expression of the adhesion mol., intracellular adhesion mol.-1, and the activation of nuclear transcription

factor, nuclear factor .kappa.B. In addnl., endothelial cell responses were investigated by **anal.** of intracellular ionized calcium concns. Results indicate that unmodified Hb in a concn. of 0.4 mmol/L can aggravate endothelial cell oxidative and inflammatory responses. This Hb produced a significant ($p < 0.01$) depletion of reduced glutathione, acceleration of **lipid peroxidn.**, and a greater influx of Ca^{2+} . The formation of 8-iso prostaglandin F2.alpha. increased compared with the control cells ($p < 0.01$). Unmodified Hb was found to be a potent scavenger of NO, great activator of nuclear factor .kappa.B, and a stimulator of intracellular adhesion mol.-1 expression. Contrarily, the improved **blood** substitute did not appear to induce oxidative stress nor to increase the intracellular Ca^{2+} . The concn. of 8-iso prostaglandin F2.alpha. was similar to that in the control cells, whereas the formation of NO_2^-/NO_3^- was much lower ($p < 0.05$) than in the unmodified Hb group. The effect of an improved **blood** substitute can be linked with the anti-inflammatory and cytoprotective properties of adenosine, which is used as a cross-linker and surface modifier, and the type of the chem. modification procedure that lowers Hb pro-oxidant potential.

IT 27415-26-5, 8-Iso prostaglandin F2.alpha.

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(effect of blood substitute on human endothelial cell 8-iso prostaglandin F2.alpha.)

RE.CNT 95 THERE ARE 95 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L136 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:400525 HCAPLUS

DN 129:117928

TI Radioimmunoassay of 8-iso-prostaglandin F2.alpha.: an index for oxidative injury via free radical catalyzed **lipid peroxidation**

AU Basu, S.

CS Department of Geriatrics, Faculty of Medicine, Uppsala University, Uppsala, S-751 25, Swed.

SO Prostaglandins, Leukotrienes Essent. Fatty Acids (1998), 58(4), 319-325

CODEN: PLEAEU; ISSN: 0952-3278

PB Churchill Livingstone

DT Journal

LA English

AB 8-Iso-prostaglandin F2.alpha. (8-iso-PGF2.alpha.), a major F2-**isoprostane**, is biosynthesized in vivo through non-enzymic free radical-catalyzed **peroxidn.** of arachidonic acid. The levels of F2-**isoprostanes** both free in the circulation and esterified to the tissue phospholipids increase intensely in animal models of oxidant injury. This study presents the development and validation of a RIA of 8-iso-PGF2.alpha. for the measurement of this substance in the body fluids. Furthermore, its application in normal human volunteers, a pharmacokinetic study performed in rabbits with 8-iso-PGF2.alpha. and hepatic **lipid peroxidn.** in rats is reported. An antibody was raised in rabbits by immunization with 8-iso-PGF2.alpha. coupled to BSA at the carboxylic acid by 1,1'-carbonyldiimidazole method. The cross-reactivity of the antibody with 8-iso-15-keto-13, 14-dihydro-PGF2.alpha., 8-iso-PGF2.beta., PGF2.alpha., 15-keto-PGF2.alpha., 15-keto-13, 14-dihydro-PGF2.alpha., TXB2, 11.beta.-PGF2.alpha., 9.beta.-PGF2.alpha. and 8-iso-PGF3.alpha. was 1.7, 9.8, 1.1, 0.01, 0.01, 0.1, 0.03, 1.8 and 0.6%, resp. The intraassay precision was 14.5% (CV) at the level of 64 pg/0.1 mL and 12.2% with 512 pg/0.1 mL in the human plasma. Similarly, intra-assay accuracy was 95.6% and 101% for the low and the high std., resp. The detection limit was about 23 pmol/l. The appearance and disappearance of 8-iso-PGF2.alpha. in the blood and urine following i.v. administration of 8-iso-PGF2.alpha. in the rabbit was rapid. Free 8-iso-PGF2.alpha. levels in plasma and urine from normal human volunteers are evaluated and found to correlate with the obtained values by gas chromatog.-mass spectrometry methods from other studies. The levels of free 8-iso-PGF2.alpha. in the plasma and urine

increased 7- and 102-fold, resp., after CCl₄ administration to rats. Thus, this 8-iso PGF₂.alpha. RIA method is relevant to apply in the oxidative injury studies as an index of in vivo **lipid peroxidn.** through free radical catalysis mechanism.

IT 27415-26-5, 8-Iso-prostaglandin F₂.alpha.

RL: ANT (Analyte); ANST (Analytical study)

(RIA of 8-iso-prostaglandin F₂.alpha. as an index for oxidative injury via free radical catalyzed **lipid peroxidn.**)

L136 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:12187 HCAPLUS

DN 128:110905

TI Improved quantification of 8-epi-prostaglandin F₂.alpha. and F₂-**isoprostanes** by gas chromatography/triple-stage quadrupole mass spectrometry: partial **cyclooxygenase**-dependent formation of 8-epi-prostaglandin F₂.alpha. in humans

AU Schweer, Horst; Watze, Bernhard; Seyberth, Hannsjorg W.; Nusing, Rolf M.

CS Children's Hospital, Philipps University Marburg, Marburg, D-35033, Germany

SO J. Mass Spectrom. (1997), 32(12), 1362-1370

CODEN: JMSPFJ; ISSN: 1076-5174

PB John Wiley & Sons Ltd.

DT Journal

LA English

AB F₂-**isoprostanes** are considered to be novel markers of lipid peroxidn. To study the in vivo formation of F₂-**isoprostanes**, an improved method was developed for isotope diln. assays involving gas chromatog./triple-stage quadrupole mass spectrometry (GC/MS/MS) including thin-layer chromatog. (TLC) (sum of all F₂-**isoprostanes**) and high-performance liq. chromatog. (HPLC) purifn. (prostaglandin F₂.alpha. (PGF₂.alpha.) and 8-epi-PGF₂.alpha.). Following the addn. of isotopically labeled prostaglandins to urine, the sample was acidified and applied to a C18 cartridge. After elution, prostaglandins were derivatized to pentafluorobenzyl esters and subjected to TLC. A broad zone was scratched off, **isoprostanes** were eluted and after formation of their trimethylsilyl ether derivs. the sum of F₂-**isoprostanes** was detd. by GC/MS/MS. For the detn. of PGF₂.alpha. and 8-epi-PGF₂.alpha. prior to trimethylsilylation an addnl. HPLC step was performed and the fractions contg. PGF₂.alpha. and 8-epi-PGF₂.alpha. were analyzed by GC/MS/MS. Using this technique, 8-epi-PGF₂.alpha. concns. in urine samples as low as 5 pg ml⁻¹ could be detd. with high accuracy. The excretion rates of **isoprostanes** were studied in comparison with the classical prostaglandins in three different groups: healthy adults, healthy children and children with hyper-PGE syndrome (HPS), a pathol. situation assocd. with a stimulated PGE₂ synthesis. F₂-**isoprostanes** represented the main arachidonic acid metabolites in these groups and 8-epi-PGF₂.alpha. excretion was comparable in its amt. to the classical prostanoids. To delineate the **cyclooxygenase**-catalyzed contribution, the influence of indomethacin, an inhibitor of **cyclooxygenases**, on F₂-**isoprostane** formation in healthy adults and in HPS children was analyzed. Significantly decreased excretion rates were obsd. 2 days after indomethacin administration for all prostanoids, including F₂-**isoprostanes** and 8-epi-PGF₂.alpha.. However, the suppression of F₂-**isoprostanes** and 8-epi-PGF₂.alpha. excretion rates was less pronounced in comparison with the classical prostanoids. An improved and reliable method for the detn. of F₂-**isoprostanes** and esp. 8-epi-PGF₂.alpha., has been developed. The data obtained on human urine samples indicates a contribution of the **cyclooxygenase** pathway to the formation of **isoprostanes**.

IT 27415-26-5, 8-epi-Prostaglandin F₂.alpha.

RL: ANT (Analyte); BPR (Biological process); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)

(improved quantification of 8-epi-PGF₂.alpha. and F₂-**isoprostanes** by gas chromatog./triple-stage quadrupole mass

spectrometry and partial **cyclooxygenase**-dependent formation of 8-epi-PGF2.alpha. in humans)

IT 39391-18-9, **Cyclooxygenase**

RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(improved quantification of 8-epi-PGF2.alpha. and F2-isoprostanes by gas chromatog./triple-stage quadrupole mass spectrometry and partial **cyclooxygenase**-dependent formation of 8-epi-PGF2.alpha. in humans)

L136 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:576125 HCAPLUS

DN 127:273177

TI Reduction of urinary 8-epi-prostaglandin F2.alpha. during cyclooxygenase inhibition in rats but not in man

AU Bachi, Angela; Brambilla, Raffaella; Fanelli, Roberto; Bianchi, Roberto; Zuccato, Ettore; Chiabrando, Chiara

CS Inst. Ric. Farmacol. "Mario Negri", Milan, 20157, Italy

SO Br. J. Pharmacol. (1997), 121(8), 1770-1774

CODEN: BJPCBM; ISSN: 0007-1188

PB Stockton

DT Journal

LA English

AB 8-Epi-prostaglandin (PG) F2.alpha., a major F2 **isoprostane**, is produced in vivo by free radical-dependent **peroxidn.** of **lipid**-esterified arachidonic acid. Both cyclo-oxygenase isoforms (COX-1 and COX2) may also form free 8-epi-PGF2.alpha. as a minor product. It has been recently seen in human volunteers that the overall basal formation of 8-epi-PGF2.alpha. in vivo is mostly COX-independent and urinary 8-epi-PGF2.alpha. is therefore an accurate marker of 'basal' oxidative stress in vivo. To test the validity of this marker in the rat, the authors evaluated in vivo the effect of COX inhibition on the formation of 8-epi-PGF2.alpha. vs. prostanoids. Two structurally unrelated COX inhibitors (naproxen: 30 mg/kg/day; indomethacin: 4 mg/kg/day) were given i.p. to rats kept in metabolic cages. In vivo formation of 8-epi-PGF was assessed by measuring its urinary excretion. Prostanoid biosynthesis was assessed by measuring urinary excretion of major metabolites of thromboxane (TX) and prostacyclin (2,3-dinor-TXB1 and 2,3-dinor-6-keto-PGF2.alpha.). All compds. were selectively measured by immunopurifn./gas chromatog.-mass spectrometry. Naproxen reduced urinary excretion of 2,3-dinor-TXB1 and 2,3-dinor-6-keto-PGF1.alpha. but, unexpectedly, also that of 8-epi-PGF2.alpha. (82, 49, and 52% inhibition, resp.). Indomethacin had a similar effect (77, 69 and 55% inhibition). Esterified 8-epi-PGF2.alpha. in liver and plasma remained unchanged after indomethacin. These findings prompted the authors to re-assess the contribution of COX activity to the systemic prodn. of 8-epi-PGF2.alpha. in man. The authors gave naproxen (1 g day⁻¹) to healthy subjects (four nonsmokers and four smokers). Urinary 8-epi-PGF2.alpha. remained unchanged in the two groups (9,63 before vs. 10.24 after and 20.14 vs. 19.03 ng h⁻¹ 1.73 m⁻²), whereas there was a marked redn. of major urinary metabolites of thromboxane and prostacyclin (about 90% for both 11-dehydro-TXB2 and 2,3-dinor-TXB2; >50% for 2,3-dinor-6-keto-PGF1.alpha.). the authors conclude that a significant amt. of COX-dependent 8-epi-PGF2.alpha. is present in rat but not in human urine under normal conditions. To investigate whether rat COX-1 produces 8-epi-PGF more efficiently than human COX-1, the authors measured the ex vivo formation of 8-epi-PGF and TXB simultaneously in whole clotting blood. Serum levels of 8-epi-PGF and TXB were similar in rats and man. This implies that urinary 8-epi-PGF cannot be used as an index of near-basal oxidant stress in rats. On the other hand, the authors' data further confirm the validity of this marker in man.

IT 27415-26-5, 8-epi-Prostaglandin F2.alpha.

RL: BOC (Biological occurrence); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence) (redn. of urinary 8-epi-prostaglandin F2.alpha. during cyclooxygenase inhibition in rats but not in man)

L136 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:560155 HCAPLUS

DN 127:232856

TI Platelet activation and **lipid peroxidation** in patients with acute ischemic stroke

AU Van Kooten, Fop; Ciabattoni, Giovanni; Patrono, Carlo; Dippel, Diederik W. J.; Koudstaal, Peter J.

CS Department of Neurology, University Hospital Rotterdam, Rotterdam, 3015 GD, Neth.

SO Stroke (Dallas) (1997), 28(8), 1557-1563
CODEN: SJCCA7; ISSN: 0039-2499

PB American Heart Association

DT Journal

LA English

AB Both platelet activation and **lipid peroxidn.** are potential sources of vasoactive eicosanoids that can be produced via the cyclooxygenase pathway, ie, thromboxane (TX) A2, or by free radical-catalyzed **peroxidn.** of arachidonic acid, i.e., **isoprostanes**. The biosynthesis of TXA2 and F2-**isoprostanes**, as reflected by the urinary excretion of 11-dehydro-TXB2 and 8-epi-prostaglandin (PG) F2a, resp., was investigated in 62 consecutive patients (30 men, 32 women; mean 67 +/- 14 yr) with acute ischemic stroke. At least 2 consecutive 6-h **urine** samples were obtained during the first 72 h after onset of symptoms. Urinary eicosanoids were measured by previously described RIAs. Repeated periods of enhanced thromboxane biosynthesis were found in 52% of patients. Urinary 11-dehydro-TXB2 averaged 221 +/- 207 pmol/mmol creatinine in 30 patients treated with cyclooxygenase inhibitors (mostly aspirin) at the time of study vs. 392 +/- 392 in 32 untreated patients. The corresponding values for 8-epi-PGF2.alpha. excretion were 74 +/- 42 and 83 +/- 65 pmol/mmol creatinine. The correlation between the 2 metabolites was moderate in both untreated patients and patients with cyclooxygenase inhibitors. In a multiple regression **anal.**, increased thromboxane prodn. was independently assocd. with severity of stroke on admission, atrial fibrillation, and treatment with cyclooxygenase-inhibiting drugs. Thus, during the first few days after an acute ischemic stroke (1) platelet activation occurs repeatedly in a cyclooxygenase-dependent fashion; (2) platelet activation is not assocd. with concurrent changes in **isoprostane** biosynthesis; (3) platelet activation is independently assocd. with stroke severity and atrial fibrillation; and (4) **isoprostane** biosynthesis is largely independent of platelet cyclooxygenase activity.

IT 27415-26-5, 8-epi-Prostaglandin F2.alpha.

RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)

(platelet activation and **lipid peroxidn.** in men and women with acute ischemic stroke)

L136 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:469520 HCAPLUS

DN 127:156822

TI Isolation and measurement of urinary 8-iso-prostaglandin F2.alpha. by high-performance liquid chromatography and gas chromatography-mass spectrometry

AU Ferretti, Aldo; Flanagan, Vincent P.

CS Nutrient Requirements and Functions Laboratory, Beltsville Human Nutrition Research Center, US Department of Agriculture, ARS, Beltsville, MD, 20705, USA

SO J. Chromatogr., B: Biomed. Sci. Appl. (1997), 694(2), 271-276
CODEN: JCBEP; ISSN: 0378-4347

PB Elsevier

DT Journal

LA English

AB 8-Iso-Prostaglandin F2.alpha. (8-iso-PGF2.alpha.) is a product of free radical-catalyzed peroxidn. of arachidonic acid. Measurement of its

urinary excretion has been proposed as an index of oxidative status in vivo. A stable isotope diln. for its quantification by gas chromatog.-electron capture chem. ionization mass spectrometry is described. Sample cleanup required the combined use of HPLC and thin-layer chromatog. The inter-assay R.S.D. in two sep. detns. was 1.6 and 2.3%. The accuracy of the assay was evaluated through recovery expts. The equation of the regression plot correlating the amts. added and recovered was $y = 0.91x - 0.31$, $r = 0.9916$. The pair of fragment ions ($[M-181]^-$) at m/z 569 and m/z 573 was monitored for quantification. The mean 8-iso-PGF2.alpha. excretion rate was 528 (S.D.) ng per day in five male volunteers and 730 ng per day in six females. Intake of 80 mg of lycopene per day by eleven volunteers for four weeks resulted in a non-significant redn. of 8-iso-PGF2.alpha. excretion.

IT 27415-26-5, 8-Iso-prostaglandin F2.alpha.

RL: ANT (Analyte); BPR (Biological process); ANST (Analytical study); BIOL (Biological study); PROC (Process)

(isolation and measurement of urinary 8-iso-prostaglandin F2.alpha. by high-performance liq. chromatog. and gas chromatog.-mass spectrometry)

L136 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:404894 HCAPLUS

DN 127:131096

TI Enzymic synthesis of dioxygen-18-labeled 8-epi-prostaglandin F2.alpha. and its use in quantitative GC-tandem MS

AU Tsikas, Dimitrios; Schwedhelm, Edzard; Gutzki, Frank-Mathias; Jahn, Olaf; Fakistas, Panagiotis; Frolich, Jurgen C.

CS Institute of Clinical Pharmacology, Hannover Medical School, Hannover, D-30625, Germany

SO J. Labelled Compd. Radiopharm. (1997), 39(6), 531-540

CODEN: JLCRD4; ISSN: 0362-4803

PB Wiley

DT Journal

LA English

AB 8-Epi-Prostaglandin F2.alpha. (8-epi-PGF2.alpha.) is an endogenous potent vasoconstrictor, non-cyclooxygenase-derived prostanoid which may be suitable as an index of oxidative stress in living organisms. For quant. detn. of 8-epi-PGF2.alpha. in biol. fluids we describe here the one-step enzymic synthesis of $[1,1-^{18}O_2]$ -8-epi-PGF2.alpha. starting from com. available unlabeled 8-epi-PGF2.alpha., H218O, and an unspecific porcine liver esterase. The isolated and purified reaction product was found to contain 80.3% $[1,1-^{18}O_2]$ -8-epi-PGF2.alpha., 17.7% $[1,1-^{18}O_1^{16}O]$ -8-epi-PGF2.alpha., and only 2.0% unlabeled 8-epi-PGF2.alpha.. $[1,1-^{18}O_2]$ -8-epi-PGF2.alpha. is demonstrated to be a suited internal std. for quant. detn. of 8-epi-PGF2.alpha. in human urine by GC-MS/MS. In 5 mL aliquots of human urine samples from spontaneous micturation on different days, 8-epi-PGF2.alpha. was found to be present at concns. of 300 and 490 pg/mg creatinine, resp.

IT 27415-26-5, 8-epi-Prostaglandin F2.alpha.

RL: ANT (Analyte); RCT (Reactant); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(dioxygen-18-labeled 8-epi-prostaglandin F2.alpha. enzymic prepn. and use in quant. GC-tandem MS)

L136 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:283784 HCAPLUS

DN 126:312364

TI Simultaneous Solid Phase Extraction, Derivatization, and Gas Chromatographic Mass Spectrometric Quantification of Thromboxane and Prostacyclin Metabolites, Prostaglandins, and Isoprostanes in Urine

AU Wuebert, Joachim; Reder, Elke; Kaser, Andrea; Weber, Peter C.; Lorenz, Reinhard L.

CS Institute for Prophylaxis and Epidemiology of Cardiovascular Disease, University of Munich, Munich, 80336, Germany

SO Anal. Chem. (1997), 69(11), 2143-2146

CODEN: ANCHAM; ISSN: 0003-2700

PB American Chemical Society
DT Journal
LA English

AB The current **anal.** methods for the various prostanoids require a sep. and extended sample workup, derivatization, and gas chromatog./mass spectrometric detection of each compd. Therefore, the authors developed and validated a rapid method for the common purifn., derivatization, and GC/MS detn. of 11-dehydrothromboxane B2, 2,3-dinor-6-keto-PGF1a, PGF2a, PGE2, PGD2, and **isoprostanes** in **urine**. A single reversed-phase solid-phase extn. step and modified reaction conditions yielded excellent sample purifn. at high recoveries and efficient derivatization for all compds. in one vial. The method allows the simultaneous quantification of these index metabolites of systemic thromboxane and prostacyclin synthesis, renal prostaglandin formation, and nonenzymic in vivo **lipid peroxidn.** in a single GC/MS run with high sensitivity and precision.

IT 27415-26-5, 8-epi-PGF2.alpha.

RL: ANT (Analyte); ANST (Analytical study)
(simultaneous solid phase extn., derivatization, and GC-MS quantification of thromboxane and prostacyclin metabolites, prostaglandins, and **isoprostanes** in urine)

L136 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:5410 HCAPLUS

DN 126:44581

TI Enzyme immunoassay for 8-epi-prostaglandin F2.alpha. and its preliminary clinical application

AU Wang, Zhaoyue; Wang, Shanxi; Ruan, Changgeng

CS Thrombosis and Hemostasis Research Unit, Suzhou Medical College, Suzhou, 215007, Peop. Rep. China

SO Zhonghua Yixue Jianyan Zazhi (1996), 19(4), 238-241

CODEN: CHCCDO; ISSN: 0253-973X

PB Zhonghua Yixuehui

DT Journal

LA Chinese

AB The plasma 8-epi-prostaglandin F2.alpha. (8-epi-PGF2.alpha.) levels in 17 normal patients, 18 patients with acute cerebral thrombosis, and 16 patients with chronic renal failure were assayed by an acetylcholine esterase-labeled enzyme immunoassay (EIA) after the binding parameters of EIA were obtained. For the EIA, 8-epi-PGF2.alpha. was linked to the amino groups of lysines of acetylcholinesterase to prep. the enzyme tracer. To produce antibodies for the EIA, 8-epi-PGF2.alpha. was conjugated to HSA, and the conjugate was s.c. injected into rabbits. The best antiserum used for the EIA was obtained after the 5th booster, presenting a high titer (1/300000). Its linear range was 2-125 pg ml⁻¹ with an IC₅₀ of 8 ng L⁻¹. The cross reactivities with other PGs and related metabolites were negligible, and the intra- and inter-assay variabilities were 4.8% (n=14) and 7.5% (n=9), resp. The plasma 8-epi-PGF2.alpha. in patients with acute cerebral thrombosis was significantly higher than the normal level, and hemodialysis decreased the concns. of the 8-epi-PGF2.alpha. in CRF patients to normal levels. In conclusion, the EIA for 8-epi-PGF2.alpha. showed a high sensitivity and specificity, and the clin. results suggest that 8-epi-PGF2.alpha. can be used as a index of **lipid peroxidn.** and related diseases.

IT 27415-26-5, 8-Epi-Prostaglandin F2.alpha.

RL: ANT (Analyte); BPR (Biological process); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(enzyme immunoassay for 8-epi-prostaglandin F2.alpha. and its preliminary clin. application in humans with acute cerebral thrombosis or chronic renal failure)

L136 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:189330 HCAPLUS

DN 124:220702

TI Measurement of urinary 8-epi-prostaglandin F2.alpha., a novel index of **lipid peroxidation** in vivo, by immunoaffinity

- extraction/gas chromatography-mass spectrometry. Basal levels in smokers and nonsmokers
- AU Bachi, Angela; Zuccato, Ettore; Baraldi, Monica; Fanelli, Roberto; Chiabrando, Chiara
- CS Ist. Ricerche Farmacol. 'Mario Negri', Milan, Italy
- SO Free Radical Biol. Med. (1996), 20(4), 619-24
CODEN: FRBMEH; ISSN: 0891-5849
- DT Journal
- LA English
- AB 8-Epi-prostaglandin F2.alpha.-prostaglandin F2.alpha. (8-epi-PGF2.alpha.) is an F2-isoprostane recently identified as a marker of free radical-catalyzed lipid peroxidn. in vivo and potential mediator of oxidative damage. Currently, endogenous 8-epi-PGF2.alpha. is measured by gas chromatog.-mass spectrometry after lengthy sample prepn. The authors extd. and purified 8-epi-PGF2.alpha. antiserum, raised in the lab. Quantitation was done by stable-isotope diln. gas chromatog./neg.-ion chem. ionization mass spectrometry, with selected ion recording. Carboxylate anions of the pentafluorobenzyl ester trimethylsilyl ether deriv. of 8-epi-PGF2.alpha. and [2H4]8-epi-PGF2.alpha. were monitored (m/z 569 and 573). Basal urinary excretion of 8-epi-PGF2.alpha. can be accurately and rapidly measured by this method. Under normal conditions rats excreted 2.18 ng/24 h. In healthy nonsmoking young volunteers, urinary excretion of 8-epi-PGF2.alpha., measured three times on alternate days, was fairly const. (CV 2-10%). Nonsmokers excreted significantly less 8-epi-PGF2.alpha. than age-matched smokers (8.08 vs. 18.40 ng/h/1.73 m2), as reported by others using different methods.
- IT 27415-26-5, 8-epi-Prostaglandin F2.alpha.
RL: ANT (Analyte); BPR (Biological process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(epiPGF2.alpha. detn. in urine by immunoaffinity extn. and chromatog./mass spectrometry in relation to smoking in humans)
- L136 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2002 ACS
- AN 1995:655704 HCAPLUS
- DN 123:78957
- TI Analysis of F2-isoprostanes as indicators of non-enzymic lipid peroxidation in vivo by gas chromatography-mass spectrometry: development of a solid-phase extraction procedure
- AU Nourooz-Zadeh, J.; Gopaul, N. K.; Barrow, S.; Mallet, A. I.; Aengard, E. E.
- CS Department of Medicine, Division of Clinical Pharmacology and Toxicology, University College London, 5 University Street, London, WC1E 6JJ, UK
- SO J. Chromatogr., B: Biomed. Appl. (1995), 667(2), 199-208
CODEN: JCBBEP
- DT Journal
- LA English
- AB Recently, it was reported that a series of prostaglandin F2-like compds. (F2-isoprostanes) are produced in vivo during peroxidn. of arachidonic acid by a mechanism independent of the cyclooxygenase pathway. Of these, 8-epi-PGF2.alpha. is shown to be a potent vasoconstrictor. The authors describe an improved method for analyzing F2-isoprostanes in biol. fluids. The method involves solid-phase extn. on an octadecylsilane (C18) and an aminopropyl (NH2) cartridge. After conversion to pentafluorobenzyl ester and trimethylsilyl ether derivs., F2-isoprostanes are analyzed by neg.-ion chem. ionization mass spectrometry using tetradeuterated PGF2.alpha. as the internal std. The limit of detection of the assay was 10 pg/mL, with a coeff. of variation ranging from 9.4 to 15.1%. Anal. of plasma samples from healthy volunteers revealed no quantifiable levels of free (unesterified) 8-epi-PGF2.alpha.. However, the plasma samples contained 58 to 166 pg/mL of 8-epi-PGF2.alpha. when analyzed for the total (sum of free and esterified) F2-isoprostanes. The main advantages of the method lie in the improved recovery, gas chromatog. sepn. and speed compared to existing techniques.
- IT 27415-26-5, 8-epi-PGF2.alpha.

RL: ANT (Analyte); ANST (Analytical study)
(anal. of F2-**isoprostanes** as indicators of nonenzymic
lipid peroxidn. in vivo by gas chromatog.-mass
spectrometry and solid-phase extrn.)

L136 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:625452 HCAPLUS

DN 121:225452

TI Mass spectrometry of prostanoids: F2-**isoprostanes** produced by
non-**cyclooxygenase** free radical-catalyzed mechanism

AU Morrow, Jason D.; Roberts, Jackson L. II

CS Dep. Pharmacol. and Med., Vanderbilt Univ. Sch. Med., Nashville, TN,
37232, USA

SO Methods Enzymol. (1994), 233(OXYGEN RADICALS IN BIOLOGICAL
SYSTEMS, PT. C), 163-74

CODEN: MENZAU; ISSN: 0076-6879

DT Journal

LA English

AB This chapter details procedures employed for the anal. of F2-
isoprostanes from biol. sources. Specific examples are given
demonstrating both the utility and limitations of the assay. Procedures
are outlined for the anal. of both free F2-**isoprostanes** and
isoprostanes esterified to phospholipids.

IT 39391-18-9, **Cyclooxygenase**

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(mass spectrometry of F2-**isoprostane** prostanoids produced by
non-**cyclooxygenase** free radical-catalyzed mechanism)

L136 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:214486 HCAPLUS

DN 120:214486

TI Free radical-induced generation of **isoprostanes** in vivo.

Evidence for the formation of D-ring and E-ring **isoprostanes**

AU Morrow, Jason D.; Minton, Tanya A.; Mukundan, Chetan R.; Campbell,
Michelle D.; Zackert, William E.; Daniel, Vincent C.; Badr, Kamal F.;
Blair, Ian A.; Roberts, L. Jackson, II

CS Sch. Med., Vanderbilt Univ., Nashville, TN, 37232-6602, USA

SO J. Biol. Chem. (1994), 269(6), 4317-26

CODEN: JBCHA3; ISSN: 0021-9258

DT Journal

LA English

AB The authors recently reported the discovery that a series of novel
prostaglandin (PG)F2-like compds. (F2-**isoprostanes**) are produced
in vivo independent of the cyclooxygenase as products of free
radical-catalyzed lipid peroxidn. F2-
isoprostanes are initially formed in situ from arachidonic acid
esterified to phospholipids and then released preformed. The authors have
now investigated whether PGD2/E2-like **isoprostanes** are also
produced by rearrangement of the PGG2-like intermediates involved in
isoprostane formation. Using a variety of approaches utilizing
mass spectrometry, compelling evidence was obtained for the presence of
D2/E2-**isoprostane**-contg. phospholipids in the liver (85 +/- 33
ng/g of liver) and free D2/E2-**isoprostanes** in the circulation
(215 +/- 90 pg/mL) of rats treated with CCl4 to induce lipid
peroxidn. In untreated rats, levels of D2/E2-**isoprostanes**
esterified in liver phospholipids were much lower (0.90 +/- 0.10 ng/g),
and free compds. could not be detected in the circulation (<5 ng/mL).
Interestingly, one of the E2-**isoprostanes** that would be expected
to be formed in abundance, 8-epi-PGE2, was found to be a potent renal
vasoconstrictor, and these effects could be abrogated by SQ29548, a
thromboxane receptor antagonist. Further understanding of the biol.
consequences of the formation of these novel compds. and factors that
influence their formation may provide valuable insights into the
pathophysiol. of oxidant injury.

L136 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1993:555262 HCAPLUS
DN 119:155262
TI Collision-induced dissociation of F2-isoprostane-containing phospholipids
AU Kayganich-Harrison, Kathleen A.; Rose, David M.; Murphy, Robert C.; Morrow, Jason D.; Roberts, L. Jackson, II
CS Dep. Pediatr., Natl. Jew. Cent. Immunol. Respir. Med., Denver, CO, 80206, USA
SO J. Lipid Res. (1993), 34(7), 1229-35
CODEN: JLPRAW; ISSN: 0022-2275
DT Journal
LA English
AB Free radical-induced lipid peroxidn. results in the prodn. of metabolites of arachidonic acid isomeric with prostaglandin F2.alpha.. The formation of these compds., termed F2-isoprostanes, occurs independent of the enzyme cyclooxygenase. The discovery that F2-isoprostanes can exert potential biol. activity has suggested that they may mediate, to some extent, the biol. responses to oxidant injury. Collision-induced dissocn. of the [M-CH3]- ions from oxidized phospholipids isolated by extn. and normal phase high performance liq. chromatog. from livers of rats treated with CCl4 to induce lipid peroxidn. revealed several mol. species of phospholipids that had the F2-isoprostane esterified to the glycerophosphocholine backbone. Collision-induced dissocn. of the [M-CH2CHN(CH3)3]- ion revealed that the F2-isoprostanes were primarily esterified at the sn-2-position of the glycerophospholipid as expected. Furthermore, tandem mass spectrometry of the carboxylate anion from the F2-isoprostane (m/z 353) resulted in the unique loss of 44 u characteristic of the 1,2-cyclic diol moiety such as that found in the PGF2-ring. These observations indicate that intact phospholipids contg. fatty acyl groups of the isoprostane structure can be readily detected with tandem mass spectrometry even when present as minor components in a biol. ext. Although no specific isomer identification can be made from the complex mixt., these techniques establish the existence of these novel metabolites of arachidonic acid esterified to glycerophospholipids.

L136 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1993:184212 HCAPLUS
DN 118:184212
TI Identification of non-cyclooxygenase-derived prostanoid (F2-isoprostane) metabolites in human urine and plasma
AU Awad, Joseph A.; Morrow, Jason D.; Takahashi, Kihito; Roberts, L. Jackson, II
CS Sch. Med., Vanderbilt Univ., Nashville, TN, 37232-6602, USA
SO J. Biol. Chem. (1993), 268(6), 4161-9
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
AB Recently, it was reported that a series of prostaglandin F2-like compds. (F2-isoprostanes) capable of exerting potent biol. activity are produced in vivo by free radical-induced lipid peroxidn. Their formation is independent of the cyclooxygenase enzyme and has been shown to increase profoundly in animal models of free radical injury and lipid peroxidn. This study reports the identification of F-ring isoprostane metabolites in human urine and plasma utilizing a gas chromatog./mass spectrometric assay for the major urinary metabolite of prostaglandin D2 (9.alpha.,11.beta.-dihydroxy-15-oxo-2,3,18,19-tetranorprost-5-ene-1,20-dioic acid). Evidence confirming these metabolites as tetranor, dicarboxylic acid compds. contg. one double bond, cis-cyclopentane ring hydroxyls, and one keto group similar in structure to the major urinary metabolite of prostaglandin D2 was obtained by anal. of human urine by electro ionization mass spectrometry. Levels of these metabolites in normal human urine were detd. and found to be unaffected by cyclooxygenase inhibitors. Evidence that these metabolites arise from F2-isoprostanes was obtained by demonstrating that

(a) marked increases in plasma levels and urinary excretion of these metabolites, which were unaffected by coadministration of indomethacin, occurred in rats administered CCl₄ to induce F2-isoprostane formation and (b) marked increases in levels of these metabolites in plasma and urine resulted from the i.v. infusion of F2-isoprostanes into a rat. Quantification of these isoprostane metabolites in urine and plasma may provide a reliable index of endogenous isoprostane prodn. which could prove to be an important advance in our ability to assess oxidant stress in vivo in humans.

=> fil medline

FILE 'MEDLINE' ENTERED AT 09:58:12 ON 29 JAN 2002

FILE LAST UPDATED: 28 JAN 2002 (20020128/UP). FILE COVERS 1958 TO DATE.

On April 22, 2001, MEDLINE was reloaded. See HELP RLOAD for details.

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MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2001 vocabulary. Enter HELP THESAURUS for details.

The OLDMEDLINE file segment now contains data from 1958 through 1965. Enter HELP CONTENT for details.

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=> d all 1147

L147 ANSWER 1 OF 1 MEDLINE

AN 1999078771 MEDLINE

DN 99078771 PubMed ID: 9861778

TI Portal levels of the **isoprostane** F2 alpha-III, a marker of **lipid peroxidation**, do not correlate with increased portal pressure in cirrhotic patients.

AU Pratico D; Rossi E; Merli M; Riggio O; FitzGerald G A; Violi F

CS Center for Experimental Therapeutics, University of Pennsylvania, School of Medicine, Philadelphia, USA.

SO JOURNAL OF INVESTIGATIVE MEDICINE, (1998 Dec) 46 (9) 430-4.
Journal code: B9K; 9501229. ISSN: 1081-5589.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199901

ED Entered STN: 19990128

Last Updated on STN: 19990128

Entered Medline: 19990113

AB BACKGROUND: **Isoprostane** F2 alpha-III (

iPF2 alpha-III), a recently described member

of a family of prostaglandin F2 alpha isomers and a biologically

active end-product of **lipid peroxidation**, has been

reported to increase portal pressure in cirrhotic rats. We found that its

urinary levels were elevated in cirrhotic patients. METHODS: To

investigate whether portal levels of **iPF2 alpha-**

III were elevated in cirrhotic patients and whether there was a

relationship between these levels and the portal pressure in the same

patients, peripheral and portal plasma from cirrhotic patients (n = 18) undergoing elective transjugular intrahepatic portosystemic shunt and appropriate controls (n = 18) were assayed for **iPF2 alpha-III** levels by using a gas chromatography/mass spectrometry assay. Portal pressure was measured in all cirrhotic patients. RESULTS: Cirrhotic patients had higher peripheral plasma levels of **iPF2 alpha-III** [78 (27-150) pg/mL] than controls [18(10-30)pg/mL] (P < 0.001). Portal **iPF2 alpha-III** levels were higher than plasma peripheral levels [129(50-375) pg/mL; P < 0.0001]. No correlation was found between peripheral and portal levels of **iPF2 alpha-III** (Rho = 0.17, P = 0.5). Portal levels of **iPF2 alpha-III** and portal pressure did not correlate (Rho = 0.17, P = 0.49). CONCLUSIONS: This study shows that peripheral and portal levels of **iPF2 alpha-III**, marker of in vivo **lipid peroxidation**, are elevated in liver cirrhosis. There is no correlation between **iPF2 alpha-III** portal levels and the portal pressure observed in these patients. These findings suggest that this biologically active **isoprostane** does not directly contribute to the portal hypertension observed in hepatic cirrhosis.

CT Check Tags: Comparative Study; Female; Human; Male
 Aged
 Aged, 80 and over
 Biological Markers: BL, blood
 *Dinoprost: AA, analogs & derivatives
 Dinoprost: BL, blood
 Hypertension, Portal: BL, blood
 *Hypertension, Portal: PP, physiopathology
 Hypertension, Portal: SU, surgery
 *Lipid Peroxidation
 *Liver Cirrhosis: BL, blood
 Liver Cirrhosis: PP, physiopathology
 Liver Cirrhosis: SU, surgery
 Mass Fragmentography
 Middle Age
 Portal Pressure
 Portal Vein
 Portasystemic Shunt, Transjugular Intrahepatic
 RN 551-11-1 (Dinoprost)
 CN 0 (8,12-iso-**isoprostane** F2alpha-III); 0 (Biological Markers)

=> d all tot

L161 ANSWER 1 OF 13 MEDLINE
 AN 1999034738 MEDLINE
 DN 99034738 PubMed ID: 9817703
 TI 8-**Isoprostane** as a biomarker of oxidative stress in interstitial lung diseases.
 AU Montuschi P; Ciabattini G; Paredi P; Pantelidis P; du Bois R M; Kharitonov S A; Barnes P J
 CS Imperial College School of Medicine at the National Heart and Lung Institute, Department of Thoracic Medicine, Interstitial Lung Disease Unit, Royal Brompton Hospital, London, United Kingdom.
 SO AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE, (1998 Nov) 158 (5 Pt 1) 1524-7.
 Journal code: BZS; 9421642. ISSN: 1073-449X.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Abridged Index Medicus Journals; Priority Journals
 EM 199812
 ED Entered STN: 19990115
 Last Updated on STN: 19990115
 Entered Medline: 19981218

AB Oxidative stress contributes to the pathophysiology of interstitial lung diseases, such as cryptogenic fibrosing alveolitis (CFA), fibrosing alveolitis associated with systemic sclerosis (FASSc) and sarcoidosis. F2-isoprostanes are a series of **prostaglandin** (PG) F2-like compounds produced in vivo independent of **cyclooxygenase**, as products of the radical-catalyzed lipid peroxidation. Measurement of the concentrations of F2-isoprostanes has proved to be valuable in assessing oxidative stress in vivo. The aim of this study was to measure 8-epi-PGF2alpha concentrations, one of the most abundant F2-isoprostane in humans, in bronchoalveolar lavage (BAL) in normal subjects and to compare them to those observed in patients with CFA (n = 9), FASSc (n = 8) and sarcoidosis (n = 10). 8-epi-PGF2alpha was detectable in BAL fluid in normal subjects (9.6 +/- 0.8 pg/ml) and its concentrations were increased approximately 5-fold in patients with CFA (47.4 +/- 7.0, p < 0.001) and FASSc (43.2 +/- 3.3, p < 0.001). 8-epi-PGF2alpha was also increased in patients with sarcoidosis, although to a lesser extent (12.0 +/- 0.70 pg/ml, p < 0.01). No correlation between 8-epi-PGF2alpha and either lung function tests or BAL cell types was observed in any group of patients. Our study shows that the level of oxidative stress is enhanced in patients with interstitial lung diseases as reflected by increased concentrations of 8-epi-PGF2alpha in BAL fluid.

CT Check Tags: Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't

Adult

Biological Markers: AN, analysis

Bronchoalveolar Lavage Fluid: CH, chemistry

Bronchoscopy

*Dinoprost: AA, analogs & derivatives

Dinoprost: AN, analysis

Free Radicals: AN, analysis

Linear Models

Lipid Peroxidation

*Lung Diseases, Interstitial: ME, metabolism

Middle Age

Nitric Oxide: AN, analysis

*Oxidative Stress

Pulmonary Fibrosis: ME, metabolism

Sarcoidosis: ME, metabolism

Scleroderma, Systemic: ME, metabolism

Tomography, X-Ray Computed

RN 10102-43-9 (Nitric Oxide); 155976-51-5 (8-isoprostane);
551-11-1 (Dinoprost)

CN 0 (Biological Markers); 0 (Free Radicals)

L161 ANSWER 2 OF 13 MEDLINE

AN 1998188223 MEDLINE

DN 98188223 PubMed ID: 9520386

TI IPF2alpha-I: an index of lipid peroxidation in humans.

AU Pratico D; Barry O P; Lawson J A; Adiyaman M; Hwang S W; Khanapure S P;
Iuliano L; Rokach J; FitzGerald G A

CS Center for Experimental Therapeutics, University of Pennsylvania,
Philadelphia, PA 19104-6100, USA.

NC DK44730 (NIDDK)
HL54500 (NHLBI)
MO IRR0040 (NCRR)

SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF
AMERICA, (1998 Mar 31) 95 (7) 3449-54.
Journal code: PV3; 7505876. ISSN: 0027-8424.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199805

ED Entered STN: 19980514

Last Updated on STN: 19980514

Entered Medline: 19980501

AB **Isoprostanes** are **prostaglandin** isomers produced from arachidonic acid by a free radical-catalyzed mechanism. Urinary excretion of 8-iso-**prostaglandin** F2alpha, an isomer of the PGG/H synthase (cyclooxygenase or COX) enzyme product, **prostaglandin** F2alpha (PGF2alpha), has exhibited promise as an index of oxidant stress in vivo. We have developed a quantitative method to measure **isoprostane** F2alpha-I, (IPF2alpha-I) a class I isomer (8-iso-PGF2alpha is class IV), using gas chromatography/mass spectrometry. IPF2alpha-I is severalfold as abundant in human urine as 8-iso-PGF2alpha, with mean values of 737 +/- 20.6 pg/mg creatinine. Both **isoprostanes** are formed in a free radical-dependent manner in low density lipoprotein oxidized by copper in vitro. However, IPF2alpha-I, unlike 8-iso-PGF2alpha, is not formed in a COX-dependent manner by platelets activated by thrombin or collagen in vitro. Similarly, COX inhibition in vivo has no effect on IPF2alpha-I. Neither serum IPF2alpha-I, an index of cellular capacity to generate the **isoprostane**, nor urinary excretion of IPF2alpha-I, an index of actual generation in vivo, is depressed by aspirin or indomethacin. In contrast, both serum thromboxane B2 and urinary excretion of its 11-dehydro metabolite are depressed by the COX inhibitors. Although serum 8-iso-PGF2alpha formation is substantially depressed by COX inhibitors, urinary excretion of the compound is unaffected. Urinary IPF2alpha-I is elevated in cigarette smokers compared with controls (1525 +/- 180 versus 740 +/- 40 pg/mg creatinine; P < 0.01) and is highly correlated with urinary 8-iso-PGF2alpha (r = 0.9; P < 0.001). Urinary IPF2alpha-I is a novel index of lipid peroxidation in vivo, which can be measured with precision and sensitivity. It is an abundant F2-**isoprostane** formed in a free radical- but not COX-dependent manner. Although 8-iso-PGF2alpha may be formed as a minor product of COX, this pathway contributes trivially, if at all, to levels in urine. Urinary excretion of both **isoprostanes** is elevated in cigarette smokers.

CT Check Tags: Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.; Support, U.S. Gov't, P.H.S.

Biological Markers

Dinoprost: CH, chemistry

***Dinoprost: UR, urine**

Isomerism

***Lipid Peroxidation**

Oxidative Stress

RN 551-11-1 (Dinoprost)

CN 0 (Biological Markers)

L161 ANSWER 3 OF 13 MEDLINE

AN 1998165499 MEDLINE

DN 98165499 PubMed ID: 9506655

TI Eight-epi-PGF2alpha: a possible marker of lipid peroxidation in term infants with severe pulmonary disease.

AU Goil S; Truog W E; Barnes C; Norberg M; Rezaiekhalthigh M; Thibeault D

CS The Children's Mercy Hospital, Department of Pediatrics, The University of Missouri-Kansas City School of Medicine, 64108-9898, USA.

SO JOURNAL OF PEDIATRICS, (1998 Feb) 132 (2) 349-51.

Journal code: J LZ; 0375410. ISSN: 0022-3476.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Abridged Index Medicus Journals; Priority Journals

EM 199804

ED Entered STN: 19980410

Last Updated on STN: 19980410

Entered Medline: 19980401

AB A **prostaglandin** F2-like compound, 8-epi-PGF2alpha, formed from oxidation of arachidonate, has been proposed as an indicator of lipid peroxidation. We determined whether tracheal aspirate or urinary 8-epi-PGF2alpha levels would differ over time or between infants in a control group and infants with severe respiratory failure. We correlated

tracheal aspirate 8-epi-PGF2alpha levels with the fraction of inspired oxygen and with mean airway pressures at 24 and 48 hours of life. Levels in tracheal aspirates were in the range of 0 to 36 pg/microg of fSC of IgA and were higher in infants with severe pulmonary disorders compared with those in infants in the control group (p < 0.02). Urinary concentrations did not discriminate between sick infants and infants in the control group.

CT Check Tags: Human; Support, Non-U.S. Gov't

Biological Markers: AN, analysis

***Dinoprost: AA, analogs & derivatives**

Dinoprost: AN, analysis

Dinoprost: UR, urine

Exudates and Transudates: CH, chemistry

Immunoenzyme Techniques

Infant, Newborn

***Lipid Peroxidation**

***Lung Diseases: PP, physiopathology**

***Respiratory Distress Syndrome: PP, physiopathology**

Respiratory Distress Syndrome: UR, urine

Trachea

RN 155976-51-5 (8-isoprostane); 551-11-1 (Dinoprost)

CN 0 (Biological Markers)

L161 ANSWER 4 OF 13 MEDLINE

AN 1998073662 MEDLINE

DN 98073662 PubMed ID: 9409197

TI **Isoprostanes: potential markers of oxidant stress in atherothrombotic disease.**

AU Patrono C; FitzGerald G A

CS Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia 19104-6100, USA.

NC 1P50HL54500 (NHLBI)

MO1 RR 00040 (NCRR)

SO ARTERIOSCLEROSIS, THROMBOSIS, AND VASCULAR BIOLOGY, (1997 Nov)

17 (11) 2309-15. Ref: 65

Journal code: B89; 9505803. ISSN: 1079-5642.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

(REVIEW, TUTORIAL)

LA English

FS Priority Journals

EM 199801

ED Entered STN: 19980130

Last Updated on STN: 19980130

Entered Medline: 19980122

AB **Isoprostanes** are emerging as a new class of biologically active products of arachidonic acid metabolism of potential relevance to human vascular disease. Their formation in vivo seems to reflect primarily, if not exclusively, a nonenzymatic process of lipid peroxidation. Enhanced urinary excretion of 8-iso-PGF2 alpha has been described in association with cardiac reperfusion injury and with cardiovascular risk factors, including cigarette smoking, diabetes mellitus, and hypercholesterolemia. Besides providing a likely noninvasive index of lipid peroxidation in these settings, measurements of specific F2 **isoprostanes** in urine may provide a sensitive biochemical end point for dose-finding studies of natural and synthetic inhibitors of lipid peroxidation. Although the biological effects of 8-iso-PGF2 alpha in vitro suggest that it and other isoeicosanoids may modulate the functional consequences of lipid peroxidation, evidence that this is likely in vivo remains inadequate at this time.

CT Check Tags: Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.

Antioxidants: PD, pharmacology

***Arteriosclerosis: ME, metabolism**

Biological Markers

Cardiovascular Diseases: EP, epidemiology

Cardiovascular Diseases: ME, metabolism

Diabetes Mellitus: ME, metabolism

Dinoprost: AA, analogs & derivatives

Dinoprost: PD, pharmacology

Dinoprost: UR, urine

Free Radicals

Hyperlipidemia: ME, metabolism

Immunoassay

Indicator Dilution Techniques

*Lipid Peroxidation

Mass Fragmentography

*Oxidative Stress

Platelet Aggregation: DE, drug effects

*Prostaglandins F: AN, analysis

Risk Factors

*Thrombosis: ME, metabolism

Vasoconstrictor Agents: PD, pharmacology

RN 551-11-1 (Dinoprost)

CN 0 (8-isoprostaglandin F2alpha); 0 (Antioxidants); 0 (Biological Markers); 0 (Free Radicals); 0 (Prostaglandins F); 0 (Vasoconstrictor Agents)

L161 ANSWER 5 OF 13 MEDLINE

AN 1998040949 MEDLINE

DN 98040949 PubMed ID: 9373618

TI The **isoprostanes**: unique bioactive products of lipid peroxidation.

AU Morrow J D; Roberts L J

CS Department of Medicine, Vanderbilt University School of Medicine, Nashville, TN 37232-6602, USA.

NC DK48837 (NIDDK)

GM15431 (NIGMS)

GM42056 (NIGMS)

SO PROGRESS IN LIPID RESEARCH, (1997 Mar) 36 (1) 1-21. Ref: 94

Journal code: PZ7; 7900832. ISSN: 0163-7827.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

(REVIEW, ACADEMIC)

LA English

FS Priority Journals

EM 199712

ED Entered STN: 19980109

Last Updated on STN: 19980109

Entered Medline: 19971208

AB The discovery of IsoPs as products of non-enzymatic lipid peroxidation has opened up new areas of investigation regarding the role of free radicals in human physiology and pathophysiology. The quantification of IsoPs as markers of oxidative stress status appears to be an important advance in our ability to explore the role of free radicals in the pathogenesis of human disease. A drawback related to this, however, has been lack of more facile and less expensive methods than mass spectrometry for the measurement of IsoPs. On the other hand, the recent introduction of immunoassay methods for measurement of IsoPs may alleviate this problem, provided they are specific and reliable. If this is the case, immunoassay methodology will most likely lead to an expansion of the use of measurements of IsoPs to assess oxidative stress status in vivo. Another need in the field of free radical medicine is information regarding the clinical pharmacology of antioxidant agents. Because of the evidence implicating free radicals in the pathogenesis of a number of human diseases, large clinical trials are planned or underway to assess whether antioxidants can either prevent the development or ameliorate the pathology of certain human disorders. However, data regarding the most effective doses and combination of antioxidant agents to use in these clinical trials is lacking. As mentioned previously, administration of antioxidants suppresses the formation of IsoPs, even in normal

individuals. Thus, measurement of IsoPs may provide a valuable approach to defining the clinical pharmacology of antioxidants. In addition to being markers of oxidative stress, at least two IsoPs possess potent biological activity. The availability of additional IsoPs in synthetic form should broaden our knowledge concerning the role of these molecules as mediators of oxidant stress. Moreover, information regarding the nature of the receptor(s) that mediate the biological actions of IsoPs will be of considerable importance to the development of specific antagonists or agonists of the biological actions of IsoPs. Despite the fact that considerable information has been obtained since the initial report of the discovery of IsoPs, much remains to be understood about these molecules. With continued research in this area, we believe that much new information will emerge that will open up additional important new areas for future investigation.

CT Check Tags: Human; Support, U.S. Gov't, P.H.S.

Biological Markers

Dinoprost: AA, analogs & derivatives

Dinoprost: CH, chemistry

Dinoprost: ME, metabolism

Free Radicals

Isomerism

Leukotrienes: ME, metabolism

***Lipid Peroxidation**

***Oxidative Stress**

***Prostaglandins: ME, metabolism**

Receptors, Prostaglandin: ME, metabolism

Thromboxanes: ME, metabolism

RN 155976-51-5 (8-isoprostane); 551-11-1 (Dinoprost)

CN 0 (Biological Markers); 0 (Free Radicals); 0 (Leukotrienes); 0 (Prostaglandins); 0 (Receptors, Prostaglandin); 0 (Thromboxanes); 0 (prostaglandin F2alpha receptor)

L161 ANSWER 6 OF 13 MEDLINE

AN 97474772 MEDLINE

DN 97474772 PubMed ID: 9329967

TI Localization of distinct F2-isoprostanes in human atherosclerotic lesions.

CM Erratum in: J Clin Invest 1997 Nov 15;100(10):2637

AU Pratico D; Iuliano L; Mauriello A; Spagnoli L; Lawson J A; Rokach J; Macclouf J; Violi F; FitzGerald G A

CS The Center for Experimental Therapeutics, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA.

NC HL-54500 (NHLBI)

SO JOURNAL OF CLINICAL INVESTIGATION, (1997 Oct 15) 100 (8) 2028-34.

Journal code: HS7; 7802877. ISSN: 0021-9738.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Abridged Index Medicus Journals; Priority Journals

EM 199711

ED Entered STN: 19971224

Last Updated on STN: 19990129

Entered Medline: 19971120

AB F2-Isoprostanes are **prostaglandin** (PG) isomers formed in situ in cell membranes by peroxidation of arachidonic acid. 8-epi PGF2alpha and IPF2alpha-I are F2-isoprostanes produced in humans which circulate in plasma and are excreted in urine. Measurement of F2-isoprostanes may offer a sensitive, specific, and noninvasive method for measuring oxidant stress in clinical settings where reactive oxygen species are putatively involved. We determined whether isoprostanes were present in human atherosclerotic lesions, where lipid peroxidation is thought to occur in vivo. 8-epi PGF2alpha ranged from 1.310-3.450 pmol/micromol phospholipid in atherectomy specimens compared with 0.045-0.115 pmol/micromol phospholipid (P < 0.001) in vascular tissue devoid of atherosclerosis. Corresponding values of

IPF2alpha-I were 5.6-13.8 vs. 0.16-0.44 pmol/micromol phospholipid ($P < 0.001$). Levels of the two **isoprostanes** in vascular tissue were highly correlated ($r = 0.80$, $P < 0.0001$). Immunohistochemical studies confirmed that foam cells adjacent to the lipid necrotic core of the plaque were markedly positive for 8-epi PGF2alpha. These cells were also reactive with anti-CD68, an epitope specific for human monocyte/macrophages. 8-epi PGF2alpha immunoreactivity was also detected in cells positive for anti-alpha-smooth muscle actin antibody, which specifically recognizes vascular smooth muscle cells. Our results indicate that 8-epi PGF2alpha and IPF2alpha-I, two distinct F2-**isoprostanes** and markers of oxidative stress in vivo, are present in human atherosclerotic plaque. Quantitation of these chemically stable products of lipid peroxidation in target tissues, as well as in biological fluids, may aid in the rational development of antioxidant drugs in humans.

CT Check Tags: Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.

Adult

Aged

Antigens, CD: AN, analysis

Antigens, Differentiation, Myelomonocytic: AN, analysis

Aorta: CH, chemistry

Aorta: PA, pathology

*Arteries: CH, chemistry

Arteries: PA, pathology

*Arteriosclerosis

Carotid Arteries: CH, chemistry

Carotid Arteries: PA, pathology

***Dinoprost: AA, analogs & derivatives**

Dinoprost: AN, analysis

Foam Cells: CH, chemistry

Isomerism

Lipid Peroxidation

Middle Age

Oxidative Stress

Phospholipids: AN, analysis

Pulmonary Artery: CH, chemistry

Pulmonary Artery: PA, pathology

RN 27415-26-5 (8-epi-prostaglandin F2alpha); 551-11-1

(Dinoprost)

CN 0 (Antigens, CD); 0 (Antigens, Differentiation, Myelomonocytic); 0 (CD68 antigen); 0 (Phospholipids)

L161 ANSWER 7 OF 13 MEDLINE

AN 97131154 MEDLINE

DN 97131154 PubMed ID: 8976806

TI Plasma and urinary 8-iso-**prostane** as an indicator of lipid peroxidation in pre-eclampsia and normal pregnancy.

AU Barden A; Beilin L J; Ritchie J; Croft K D; Walters B N; Michael C A

CS University Department of Medicine, Royal Perth Hospital, Australia.

SO CLINICAL SCIENCE, (1996 Dec) 91 (6) 711-8.

Journal code: DIZ; 7905731. ISSN: 0143-5221.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199701

ED Entered STN: 19970128

Last Updated on STN: 19970128

Entered Medline: 19970114

AB 1. This study was designed to seek evidence for excessive lipid peroxidation in pre-eclamptic women using 8-iso-**prostane** as a novel bioactive marker of lipid peroxidation in vivo. Plasma free, total and urinary 8-iso-**prostane** were measured in 20 women with proteinuric pre-eclampsia, and compared with 18 age- and gestation-matched pregnant control subjects, before delivery and at 6 weeks post-partum. 2. Plasma free 8-iso-**prostane** was significantly elevated in the

pre-eclamptic women compared with control subjects before delivery, and fell to control levels post-partum. Conversely, levels in women with normal pregnancy rose post-partum. 3. Total plasma 8-iso-**prostane** levels were not significantly elevated in pre-eclamptic women compared with control subjects during pregnancy, but fell significantly in the pre-eclamptic women post-partum, suggesting that they had relatively higher levels compared with their non-pregnant state. 4. Urinary 8-iso-**prostane** excretion was significantly lower in the pre-eclamptic women compared with control subjects during pregnancy, suggesting that renal clearance of 8-iso-**prostane** is impaired in pre-eclampsia. 5. Increased levels of plasma free 8-iso-**prostane** in pre-eclampsia could be due to an increase in lipid peroxidation, an increase in phospholipase A2 activity or a reduction in renal clearance of 8-iso-**prostane**, or a combination of all three. The potent direct and indirect vasoconstrictor actions of 8-iso-**prostane** may contribute to the pathogenesis of pre-eclampsia.

CT Check Tags: Female; Human; Support, Non-U.S. Gov't
Adult

Biological Markers: BL, blood

Biological Markers: UR, urine

*Dinoprost: AA, analogs & derivatives

Dinoprost: BL, blood

Dinoprost: ME, metabolism

Dinoprost: UR, urine

*Lipid Peroxidation: PH, physiology

Pre-Eclampsia: BL, blood

*Pre-Eclampsia: ME, metabolism

Pre-Eclampsia: UR, urine

Pregnancy: BL, blood

*Pregnancy: ME, metabolism

Pregnancy: UR, urine

Puerperium: BL, blood

Puerperium: UR, urine

RN 155976-51-5 (8-isoprostane); 551-11-1 (Dinoprost)

CN 0 (Biological Markers)

L161 ANSWER 8 OF 13 MEDLINE

AN 97068997 MEDLINE

DN 97068997 PubMed ID: 8912185

TI A reliable and sensitive enzyme immunoassay method for measuring 8-isoprostaglandin F2 alpha: a marker for lipid peroxidation after experimental brain injury.

AU Hoffman S W; Roof R L; Stein D G

CS Brain Research Laboratory, Rutgers University, Newark, NJ 07102, USA.

SO JOURNAL OF NEUROSCIENCE METHODS, (1996 Oct) 68 (2) 133-6.

Journal code: K9V; 7905558. ISSN: 0165-0270.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199702

ED Entered STN: 19970313

Last Updated on STN: 19970313

Entered Medline: 19970228

AB The objectives of this study were to determine (1) if levels of 8-isoprostaglandin F2 alpha (8-isoPGF2 alpha), a non-enzymatically produced prostaglandin, were increased after cortical contusion and (2) if enzyme immunoassay (EIA) could be used to quantify 8-isoPGF2 alpha levels. 24 h after the contusion there was a significant rise in 8-isoPGF2 alpha compared to control levels. The levels returned to baseline by 72 h postinjury. The results show that this EIA method is a reliable and sensitive technique for measuring brain lipid peroxidation.

CT Check Tags: Animal; Support, Non-U.S. Gov't

Biological Markers

*Brain Injuries: ME, metabolism

*Dinoprostone: ME, metabolism

*Immunoassay: MT, methods
*Lipid Peroxidation: PH, physiology
Rats

RN 363-24-6 (Dinoprostone)
CN 0 (Biological Markers)

L161 ANSWER 9 OF 13 MEDLINE
AN 95250494 MEDLINE
DN 95250494 PubMed ID: 7732838
TI The **isoprostanes**: novel markers of lipid peroxidation and potential mediators of oxidant injury.
AU Roberts L J 2nd; Morrow J D
CS Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, TN 37232, USA.
NC ES00267 (NIEHS)
GM42056 (NIGMS)
SO ADVANCES IN PROSTAGLANDIN, THROMBOXANE, AND LEUKOTRIENE RESEARCH, (1995) 23 219-24.
Journal code: 2PC; 8211444. ISSN: 0732-8141.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199505
ED Entered STN: 19950608
Last Updated on STN: 19950608
Entered Medline: 19950531
CT Check Tags: Animal; Human; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
*Arachidonic Acids: AN, analysis
Biological Markers
*Lipid Peroxidation
Molecular Structure
*Oxidants: TO, toxicity
Reference Values
Stereoisomerism
CN 0 (Arachidonic Acids); 0 (Biological Markers); 0 (Oxidants)

L161 ANSWER 10 OF 13 MEDLINE
AN 95126393 MEDLINE
DN 95126393 PubMed ID: 7825845
TI **Isoprostanes**. Novel markers of endogenous lipid peroxidation and potential mediators of oxidant injury.
AU Roberts L J 2nd; Morrow J D
CS Department of Pharmacology, Vanderbilt University, Nashville, Tennessee 37232.
NC GM42056 (NIGMS)
SO ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, (1994 Nov 15) 744 237-42. Ref: 17
Journal code: 5NM; 7506858. ISSN: 0077-8923.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199502
ED Entered STN: 19950223
Last Updated on STN: 19950223
Entered Medline: 19950214
AB It was recently discovered that a series of structurally unique **prostaglandin F2-like compounds (F2-isoprostanes)** capable of exerting potent biological activity are produced in vivo in humans by a noncyclooxygenase mechanism involving free radical catalyzed peroxidation of arachidonic acid. Considerable evidence has been obtained

suggesting that quantification of F2-isoprostanes represents an important advance in our ability to assess oxidant status in vivo in humans. This has allowed us to implicate oxidant stress in the pathogenesis of human disease-for example, the hepatorenal syndrome. In addition to the F2-isoprostanes, we recently discovered that E-ring and D-ring isoprostanes are also produced in abundance in vivo by rearrangement of the isoprostane endoperoxide intermediates. We have also been able to demonstrate that one of the E2-isoprostanes, 8-epi-PGE2, is a potent renal vasoconstrictor in the rat. Insights into factors that may influence the formation of E2/D2-isoprostanes relative to F2-isoprostanes should be important in advancing our understanding of the biological consequences of the formation of isoprostanes in vivo.

CT Check Tags: Animal; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.

Biological Markers

Dinoprost: AA, analogs & derivatives

*Dinoprost: ME, metabolism

Lipid Peroxidation

RN 27415-26-5 (8-epi-prostaglandin F2alpha); 551-11-1
(Dinoprost)

CN 0 (Biological Markers)

L161 ANSWER 11 OF 13 MEDLINE

AN 95045316 MEDLINE

DN 95045316 PubMed ID: 7957003

TI Diet and oxidative stress in breast, colon and prostate cancer patients: a case-control study.

AU Hietanen E; Bartsch H; Bereziat J C; Camus A M; McClinton S; Eremin O; Davidson L; Boyle P

CS Department of Clinical Physiology, Turku University Hospital, Finland.

SO EUROPEAN JOURNAL OF CLINICAL NUTRITION, (1994 Aug) 48 (8)
575-86.

Journal code: EJC; 8804070. ISSN: 0954-3007.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199412

ED Entered STN: 19950110

Last Updated on STN: 19950110

Entered Medline: 19941227

AB OBJECTIVE: To study the changes in pro-oxidant-antioxidant status in breast, colon and prostate cancer patients as compared to respective controls. DESIGN: Cross-sectional case-control study. The pro-oxidant status was measured by analysing alkanes (ethane and pentane) in exhaled air and lipid peroxidation (as malonaldehyde) in blood samples. The antioxidant capacity was measured by studying blood glutathione concentration, vitamin concentrations and serum antioxidant capacity in liposomes in vitro. SETTING: Aberdeen hospitals. SUBJECTS: Breast, prostate and colon cancer cases, and age- and sex-matched control patients (hospitalized for a benign disease). Breast cancer patients were females, prostate cancer patients were males and colon cancer patients were both males and females. Controls were age-matched to within 5 years, sex-matched and matched for smoking habits. RESULTS: The dietary study suggested a higher monoene and polyene fat intake in prostate cancer than in controls while in other cancer patients no significant differences were found. Breast and colon cancer patients tended to have lower vitamin intakes than controls. Pentane concentration in exhaled air increased in breast cancer patients as compared to respective controls. In serum total antioxidant capacity no significant differences were found. Both breast and colon cancer patients showed decreased C18:2 and C20:4 fatty acid concentrations in red blood cells while C22:6 concentration was elevated in breast cancer patients. CONCLUSIONS: Oxidative stress may be associated with malignant diseases, suggesting the importance of simultaneous analysis of pro- and antioxidation in the search of mechanistic parameters leading to the

tumour formation.

CT Check Tags: Female; Human; Male; Support, Non-U.S. Gov't
Adult
Aged
Aged, 80 and over

Biological Markers

Breast Neoplasms: EP, epidemiology
*Breast Neoplasms: ET, etiology
Breast Neoplasms: ME, metabolism
Breast Neoplasms: PA, pathology
Breath Tests
Case-Control Studies
Colonic Neoplasms: EP, epidemiology
*Colonic Neoplasms: ET, etiology
Colonic Neoplasms: ME, metabolism
Colonic Neoplasms: PA, pathology
Cross-Sectional Studies
*Diet: AE, adverse effects
Ethane: AN, analysis
Glutathione: BL, blood

Lipid Peroxidation

Malondialdehyde: BL, blood
Matched-Pair Analysis
Middle Age
Neoplasm Staging

***Oxidative Stress: PH, physiology**

Pentanes: AN, analysis
Pilot Projects

Prostatic Neoplasms: EP, epidemiology

***Prostatic Neoplasms: ET, etiology**

Prostatic Neoplasms: ME, metabolism

Prostatic Neoplasms: PA, pathology

Risk Factors

Vitamins: BL, blood

RN 109-66-0 (pentane); 542-78-9 (Malondialdehyde); 70-18-8 (Glutathione);
74-84-0 (Ethane)

CN 0 (Biological Markers); 0 (Pentanes); 0 (Vitamins)

L161 ANSWER 12 OF 13 MEDLINE

AN 93121868 MEDLINE

DN 93121868 PubMed ID: 1478157

TI Possible relevance of lipid peroxidation and thromboxane production to the
initiation and/or evolution of microangiopathy in non-hyperlipidemic type
2 diabetes mellitus.

AU Katoh K

CS Third Department of Internal Medicine, Fukushima Medical College, Japan.

SO DIABETES RESEARCH AND CLINICAL PRACTICE, (1992 Nov) 18 (2)
89-98.

Journal code: EBI; 8508335. ISSN: 0168-8227.

CY Netherlands

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199302

ED Entered STN: 19930226

Last Updated on STN: 19930226

Entered Medline: 19930209

AB To investigate the possible relevance of free radicals and
prostanoids to the mode of initiation and/or evolution of
microangiopathy in diabetes mellitus, we measured serum lipid peroxides
(LPO), an accepted index of intravascular free radicals, and plasma
11-dehydrothromboxane B2 (11-dehydro-TXB2), a stable metabolite of
vasoactive thromboxane A2 released from platelets, in 95 patients with
normolipidemic type 2 (non-insulin-dependent) diabetes mellitus at
different stages of the disease. In general, either LPO or 11-dehydro-TXB2
was significantly greater in the patients, as a group, than in the matched

controls (3.82 vs. 2.65 nmol/ml, $P < 0.01$ for LPO; and 17.3 vs. 5.8 pg/ml, $P < 0.01$ for 11-dehydro-TXB2). In patients, both LPO and 11-dehydro-TXB2 increased according to the severity of their diabetic retinopathy. A highly significant positive correlation existed between the LPO values and 11-dehydro-TXB2 in the patients ($r = 0.64$, $P < 0.0001$), while there was no such relationship in the controls ($r = 0.18$, $P = \text{NS}$). No difference in serum levels of apolipoproteins A-I, A-II, B, C-II, C-III, or E was observed between the patients and controls. Short-term glycemic control (25 cal/kg of standardized body weight/day, for 8 weeks) resulted in a small but significant reduction in LPO (4.2 vs. 4.6 nmol/ml, control; $P < 0.05$) without alteration in 11-dehydro-TXB2. There was a tendency towards deterioration in LPO according to the improvement in glycemic control. These results appear consistent with the view that, in addition to LPO, the release of TXA2 from activated platelet in the human circulation could be an important factor for the initiation and/or evolution of microangiopathy in diabetic patients even when they are not apparently hyperlipidemic. Further, the results of the present study emphasize the notion that more tight control of serum lipids is worthy of serious consideration in preventing the advance of diabetic microangiopathy.

CT Check Tags: Female; Human; Male

Aged

*Apolipoproteins: BL, blood

Biological Markers: BL, blood

Blood Glucose: AN, analysis

Cholesterol: BL, blood

Diabetes Mellitus, Non-Insulin-Dependent: BL, blood

*Diabetes Mellitus, Non-Insulin-Dependent: PP, physiopathology

*Diabetic Angiopathies: BL, blood

*Diabetic Angiopathies: DI, diagnosis

Diabetic Nephropathies: BL, blood

Diabetic Retinopathy: BL, blood

Free Radicals

Hemoglobin A, Glycosylated: AN, analysis

***Lipid Peroxidation**

*Lipid Peroxides: BL, blood

Lipoproteins, HDL Cholesterol: BL, blood

Middle Age

Reference Values

*Thromboxane B2: AA, analogs & derivatives

Thromboxane B2: BL, blood

Triglycerides: BL, blood

RN 54397-85-2 (Thromboxane B2); 57-88-5 (Cholesterol); 67910-12-7 (11-dehydro-thromboxane B2)

CN 0 (Apolipoproteins); 0 (Biological Markers); 0 (Blood Glucose); 0 (Free Radicals); 0 (Hemoglobin A, Glycosylated); 0 (Lipid Peroxides); 0 (Lipoproteins, HDL Cholesterol); 0 (Triglycerides)

L161 ANSWER 13 OF 13 MEDLINE

AN 91323757 MEDLINE

DN 91323757 PubMed ID: 1907587

TI Quantification of noncyclooxygenase derived **prostanoids** as a marker of oxidative stress.

AU Morrow J D; Roberts L J 2nd

CS Department of Pharmacology, Vanderbilt University, Nashville, TN 37232-6602.

NC GM 07569 (NIGMS)

GM 42056 (NIGMS)

SO FREE RADICAL BIOLOGY AND MEDICINE, (1991) 10 (3-4) 195-200.

Journal code: FRE; 8709159. ISSN: 0891-5849.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199109

ED Entered STN: 19910929

Last Updated on STN: 19910929

Entered Medline: 19910912

AB Recently, we discovered there is a unique class of **prostaglandin** F2-like compounds that are formed in vitro from arachidonoyl-containing lipids in plasma by a free radical-catalyzed mechanism. More recent studies have elucidated that these **prostanoids** are also produced in vivo in humans by a similar noncyclooxygenase mechanism. Levels of these PGF2 compounds detected by a mass spectrometric assay in normal human plasma and urine range from approximately 5-50 pg/mL and 500-3000 pg/mg creatinine, respectively. Circulating levels of the compounds were shown to increase by as much as 200-fold in animal models of free radical-induced lipid peroxidation. These results suggest that quantification of these **prostanoids** may provide a new approach to assess oxidative stress in vivo in humans. Potential advantages of this approach are that the mass spectrometric assay has a high degree of sensitivity, accuracy, and specificity and the assay can be used to quantitate these compounds in a variety of biological fluids. In addition, quantification of these compounds is of interest because these compounds possess biological activity. Disadvantages of the assay are the potential of ex vivo formation of these compounds in biological fluids containing lipids and, further, these compounds must be differentiated from PGF2 compounds that are formed via the **cyclooxygenase** enzyme. In addition, because the levels of these compounds in normal human plasma and urine are relatively high, assaying these compounds in circulating plasma and urine may be somewhat insensitive for the detection of increased production at isolated sites of oxidant injury within the body, in which case sampling near localized sites of their formation may be required. (ABSTRACT TRUNCATED AT 250 WORDS)

CT Check Tags: Human; Support, U.S. Gov't, P.H.S.

Biological Markers

Dinoprost: BL, blood

Dinoprost: UR, urine

Free Radicals

Lipid Peroxidation

*Oxygen: ME, metabolism

Prostaglandin-Endoperoxide Synthase: BL, blood

Prostaglandin-Endoperoxide Synthase: UR, urine

*Prostaglandins: AN, analysis

Prostaglandins: BL, blood

Prostaglandins: UR, urine

Stress

RN 551-11-1 (Dinoprost); 7782-44-7 (Oxygen)

CN 0 (Biological Markers); 0 (Free Radicals); 0 (Prostaglandins);

EC 1.14.99.1 (Prostaglandin-Endoperoxide Synthase)

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SET COST OFF

FILE 'HCAPLUS' ENTERED AT 07:14:19 ON 29 JAN 2002

E ISOPROSTANE

L1 558 S E1-E9
 L2 3 S ISO PROSTAN?
 L3 559 S L1,L2
 L4 0 S (IPF2ALPHA OR IPF2ALFA)()III
 L5 0 S IPF()(2ALPHA OR 2ALFA)()III
 L6 0 S IPF()2()(ALPHA OR ALFA)()III
 L7 0 S L3 (L) (2ALPHA OR 2ALFA OR 2()(ALPHA OR ALFA))(L)III
 L8 0 S L3 (L) (2ALPHA OR 2ALFA OR 2()(ALPHA OR ALFA))(L)VI
 L9 0 S L3 (L) (2ALPHA OR 2ALFA OR 2()(ALPHA OR ALFA))(L)VI
 L10 0 S IPF()2()(ALPHA OR ALFA)()VI
 L11 0 S IPF()(2ALPHA OR 2ALFA)()VI
 L12 2 S (IPF2ALPHA OR IPF2ALFA)()VI
 L13 30 S IPF2(L) (ALPHA OR ALFA)(L)III
 L14 18 S IPF2(L) (ALPHA OR ALFA)(L)VI

L15 39 S L13,L14
L16 12 S L15 (L) 8 12 ISO

FILE 'REGISTRY' ENTERED AT 07:24:25 ON 29 JAN 2002

L17 3 S 190664-75-6 OR 180469-63-0 OR 214894-56-1
E IPF2.ALPHA.-III/CN
L18 1 S E3
L19 2 S E2,E4
L20 1 S L17 NOT L18,L19
L21 1 S L18,L19 NOT L17
E ISOPROSTANE/CN
L22 3 S E4-E6
L23 1 S E2 NOT L22
E 8,12-ISO/CN
L24 5 S L17-L23
L25 1 S 7782-44-7
E CYCLOOXYGNASE/CN
E CYCLOOXYGENASE/CN
L26 1 S E3
L27 2 S E6,E7
L28 3 S L26,L27

FILE 'HCAPLUS' ENTERED AT 07:28:57 ON 29 JAN 2002

L29 321 S L24
L30 23 S L17
L31 44 S L15,L16,L30
L32 665 S L3,L29
L33 40 S L32 AND L31
L34 44 S L31,L33
L35 625 S L32 NOT L34
E FFITZGERALD G/AU
E FITZGERALD G/AU
L36 274 S E3,E4,E15-E19
E ROKACH J/AU
L37 251 S E3,E4,E6-E8
E PRATICO D/AU
L38 69 S E3,E4
E TROJANOWSKI J/AU
L39 251 S E3-E5,E9-E12
L40 766 S L36-L39
L41 32 S L40 AND L34
L42 41 S L40 AND L35
L43 73 S L41,L42
L44 25 S L43 AND (QUANTITATIVE OR QUANTIFICATION OR EVIDENCE OR ASSESS
L45 14 S L43 AND REVIEW/ST
L46 115 S (L17 OR L24) (L) (OCCU/RL OR ANST/RL OR ANT/RL)
L47 16 S L43 AND L46
L48 35 S L44,L45,L47
L49 21 S L48 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
L50 20 S L49 NOT 128:58619/DN
L51 66 S L40 AND P/DT
L52 1 S L51 AND L34,L35
L53 10 S L25 AND L40
L54 39 S L28 AND L40
L55 3 S L53,L54 AND L50
L56 21 S L49,L52,L55

FILE 'REGISTRY' ENTERED AT 08:56:13 ON 29 JAN 2002

L57 1 S 78-44-4

FILE 'REGISTRY' ENTERED AT 08:56:35 ON 29 JAN 2002

FILE 'HCAPLUS' ENTERED AT 08:57:33 ON 29 JAN 2002

L58 165 S L57
L59 6 S ISOPROTAN# OR ISOPROTHAN# OR ISO() (PROTAN# OR PROTHAN#)
L60 168 S CARISOPRODOL#

L61 231 S L58-L60
L62 1 S L40 AND L61
L63 21 S L56,L62
L64 21 S L63 AND L1-L16,L29-L56,L58-L63
SEL HIT RN

FILE 'REGISTRY' ENTERED AT 09:03:45 ON 29 JAN 2002

L65 7 S E1-E7
L66 10 S L24,L28,L57,L65

FILE 'REGISTRY' ENTERED AT 09:04:35 ON 29 JAN 2002

FILE 'HCAPLUS' ENTERED AT 09:04:46 ON 29 JAN 2002

FILE 'BIOSIS' ENTERED AT 09:06:23 ON 29 JAN 2002

E FITZGERALD G/AU
L67 537 S E3,E4,E21-E23
E ROKACH J/AU
L68 185 S E3,E4,E6-E8
E PRATICO D/AU
L69 92 S E3-E5
E TROJANOWSKI J/AU
L70 579 S E3-E6,E9-E13
L71 1288 S L67-L70
L72 84 S L57
L73 90 S L59 OR L60
L74 6 S L24
L75 749 S L3
L76 44 S L4-L16
L77 89 S L71 AND L72-L76
L78 31 S L77 AND 00520/CC
L79 31 S L77 AND (CONFERENCE OR CONGRESS OR POSTER OR SYMPOS? OR MEETI
L80 31 S L78,L79
L81 15 S L80 AND PY<=1998
SEL DN AN 1 3 4 6 14 15
L82 9 S L81 NOT E1-E12

FILE 'BIOSIS' ENTERED AT 09:13:24 ON 29 JAN 2002

FILE 'WPIX' ENTERED AT 09:13:34 ON 29 JAN 2002

E FITZGERALD G/AU
L83 8 S E3,E4
E ROKACH J/AU
L84 74 S E3,E4
E PRATICO D/AU
L85 1 S E3
E TROJANOWSKI J/AU
L86 16 S E3,E4
E ISOPROSTANE
L87 3 S E3,E4
L88 8 S L59 OR L60
E CARISOPRODOL/DCN
E E3+ALL
L89 5 S E2
L90 1 S L83-L86 AND L87-L89

FILE 'WPIX' ENTERED AT 09:15:27 ON 29 JAN 2002

L91 14 S L87,L88,L89
L92 13 S L91 NOT L90
L93 2 S L92 AND (G01N OR C12Q)/IC,ICM,ICS

FILE 'HCAPLUS' ENTERED AT 09:21:07 ON 29 JAN 2002

L94 230 S L61 NOT L64
L95 218 S L94 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
L96 0 S L95 AND L34
L97 0 S L95 AND L35

L154 3 S L151 AND (L28 OR COX# OR CYCLOOXYGENASE)
L155 45 S L151 AND (L25 OR O2 OR OXYGEN)
L156 5 S L153 AND L154,L155
L157 13 S L153,L156
L158 9800 S OXIDATIVE STRESS+NT/CT
L159 30 S L158 AND L151
L160 6 S L159 AND L157
L161 13 S L157,L160
L162 0 S L140 AND L158
L163 0 S L140 AND STRESS?
L164 0 S L140 AND L148
L165 0 S L140 AND BIOLOGICAL MARKERS+NT/CT

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